

RECORDS ^{OF} THE PAST

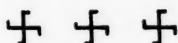
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THE KENSINGTON RUNE STONE, ITS DISCOVERY, ITS INSCRIPTIONS AND OPINIONS CONCERNING THEM

IN August, 1898, a Swedish farmer, named Olof Ohman, while clearing off the poplar woods from a part of his farm, in the northeast quarter of section 14, Solem, the most southwestern township of Douglas county, Minnesota, unearthed an inscribed stone, which has since been the subject of much discussion. The locality of the discovery is about 3 miles northerly from Kensington station and village on the Minneapolis, St. Paul and Sault Ste. Marie railway, whence the name applied to the stone is derived.

As the characters inscribed, forming 9 lines on the face of the stone and 3 lines on its edge or side, are arranged like letters and words, though mostly unlike our Roman letters, they were thought by the local school-teacher to be perhaps similar to the ancient runes of Sweden and the other Scandinavian countries and colonies. Therefore the stone was sent to the professor of Scandinavian literature in the University of Minnesota and to other Swedish, Norwegian and Danish scholars in Chicago, who found the characters to be mostly recognizable as runes of the later part of the runic period. But the translation so obtained made the astonishing claim that it was the record of an exploring expedition of Norsemen, coming from the eastern part of New England, or from Nova Scotia, discovered by the Norsemen about the year 1000 A. D. and called Vineland. The occurrence of such a record so far inland, in the western central part of Minnesota, near the geographic center of the continent, was regarded by these translators

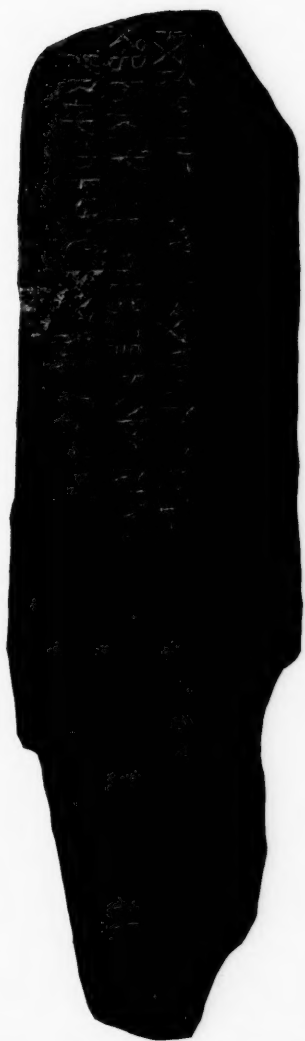
as a sufficient proof of its being a fraud of recent date, perpetrated by some Scandinavian settler or visitor for deception of scientists. With this verdict, the rune stone was returned to Mr. Ohman, and for several years it lay neglected in his dooryard.

Although some degree of publicity and popular interest had been attained by the stone soon after its discovery, the adverse decision of the early judges to whom its claims were submitted had caused it to be generally forgotten. But to the farmer and his son, a boy of 10 years, who were working together when the stone was found, it seemed quite impossible, as also to their neighbors, that it could have been placed where it was discovered at any time since the coming of white agricultural settlers, who were the first Scandinavians there within historic knowledge, about the year 1870. For above the stone, which was thinly covered by the surface soil and earth, and was lying flat with its rune-inscribed face downward, a poplar tree 8 or 10 in. in diameter had grown and had sent its main roots down at one side of the stone, while another large root of the same tree crossed the stone and then passed down at its opposite edge. The age of the poplar was evidently 30 or 40 years, showing that the stone lay where it was found before the earliest Scandinavian immigrants came into this part of Minnesota.

New interest in the stone and its inscriptions, and a gradual vindication of their probable truth, after many further adverse criticisms and discussions by runologists in this country and Europe, have come through the work of Hjalmar Rued Holand of Ephraim, Wisconsin, who in 1898, the year of the discovery of this rune stone, was graduated at the University of Wisconsin. A year later he received the A.M. degree there for postgraduate studies. In his subsequent researches on the history of Norwegian immigration to the United States, resulting in a volume of 603 pages, published in 1908, Mr. Holand has visited nearly all places having a considerable number of Norse settlers in the Northwest, including their communities in Douglas county, Minnesota. During these travels, in August, 1907, he learned from Mr. Ohman the circumstances of his finding the rune stone, and obtained it for further investigations, being persuaded that it is what its inscriptions claim. Some deficiencies of the previous translations were filled by Mr. Holand's comparisons with other runic texts. The numerals especially, which before had baffled interpretation, were ascertained to be like those that came into use in Sweden about 600 years ago, being the numeral characters of medieval almanacs, written in the decimal system.

The stone is about 30 in. long, 16 in. wide and 6 in. thick; and it weighs about 230 pounds. It is a graywacke, of dark gray color, evidently rifted from some large boulder of the glacial drift, which forms the surface of all the region.

On its reverse face, opposite to the face bearing the longer inscription, are several glacial striæ, or scratches and gouge-marks, worn in the stone by its rasping with other drift boulders or pebbles while being carried forward by the ice movement. These markings are very clear cut and have been perfectly preserved during the 7,000 to 10,000 years since the Ice



KENSINGTON RUNE STONE, EDGE VIEW

Age. Hence no surprise or reason for distrust is occasioned by the excellent preservation and unweathered condition of the rune characters.

The locality of the discovery is on the side of a morainic hill of a tract about a quarter of a mile long, inclosed on all sides by areas of swamp, which were doubtless formerly a small lake, making this morainic tract an island. The stone was 40 ft. above the swamp, and about 10 ft. below the top of the hill.

The translation of the inscription on the face of the stone, 9 lines, reads as follows:

"Eight Goths [Swedes] and 22 Norwegians on an exploring journey from Vineland very far west. We had a camp by two skerries [rocks in the water] one day's journey north from this stone. We were out fishing one day. When we returned home, we found 10 men red with blood and dead. AV. M. [Ave. Maria] Save us from the evil."

On the edge of the stone an inscription in 3 lines reads thus:

"We have 10 men by the sea to look after our vessel, 14 days' journey from this island. Year 1362."

The description of the place of their camp and fishing, and of the massacre of their comrades, a day's travel north of the rune stone, has led 3 successive observers to search, in the late autumn of 1909, for such a place on the numerous lakes at such a distance northward. Professor Andrew Fossum, of St. Olaf College, Northfield, Minnesota, after examining several lakes, thought the locality might be identified on the eastern part of Lake Christina, about 5 miles long, in the northwest corner of Douglas county. Later searches by Mr. Holand and by Prof. N. H. Winchell, the former state geologist during 30 years, 1872-1902, now the archæologist of the Minnesota Historical Society, lead them to believe confidently that the runic description is better met by a spot on the southwest part of Pelican lake, which is about 4 miles long, in the most northeastern township of Grant county, lying next westward of Lake Christina. This place on Pelican lake, where two large boulders, rising about 6 ft. above the water, lie at the end of a projecting point of the lake shore, is nearly 20 miles north-northwest from the site of the rune stone.

Professor Fossum has published in the *Norwegian American*, Northfield, Minnesota, October 22, 1909, a very interesting theory of the probable route of this exploring party, sailing from some part of our eastern coast through Hudson strait and bay, leaving their vessel, as we may suppose, near the mouths of Nelson and Hayes rivers, ascending with small and portable boats or canoes to Lake Winnipeg, thence up the Red river to its first series of strong rapids and falls, terminating a few miles below Fergus Falls, Minnesota, and thence crossing the country, probably by streams, small lakes, and portages, some 20 miles southeastward to Pelican lake. In the long days of summer, when 15 working hours or more may be rated for a day, and not counting time lost by stormy weather, halts for rest and for fishing and hunting, it may be accepted that 14 such long days of rapid

canoe travel would suffice for the whole inland journey. On the other hand, any route or method of travel then possible in coming directly from Vineland westward, through the region of the St. Lawrence river and its Great Lakes, could not be comprised within so short a time as 14 working days.

In the recent monthly meeting of the Minnesota Historical Society on December 13, 1909, this subject was fully presented by addresses of Mr. Holand, Professors Fossum and Winchell, and Dr. Knut Hoegh, of Minneapolis, the last named having aided much by interviews with Mr. Ohman and his neighbors concerning details of the discovery of the stone.

Mr. Holand took up in serial order the various objections that have been raised against the genuineness of the rune stone, classifying them as general, runic, and linguistic.

The main general obstacle is the great distance inland; for when the Norsemen had colonies in Greenland from 985 A. D. through the ensuing 5 centuries, with expeditions thence to Vineland, identified as Nova Scotia or perhaps eastern Massachusetts, we could somewhat readily accept a runic record if it were found near our northeastern coast. But no insuperable argument can be based on the distance from the coast, as is shown by the practicability of the journey from Hudson bay being made, including all probable delays, in less than one month.

The lack of a European record of this expedition may be perhaps accounted for by the failure of any of these inland explorers to return to their ships. Official memoranda have been found, according to Mr. Holand, showing that the Scandinavian home government in the year 1355 sent out a vessel with a commission to aid the Christian colonies in Greenland, and that it returned in 1364; but no details of the regions visited appear to be extant.

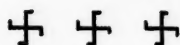
The three other speakers agreed with Mr. Holand in regarding all objections thus far made against the rune stone as answerable by referring the inscriptions to a Swedish priest or scribe accompanying the expedition.

Archbishop Ireland, of St. Paul, after the adjournment of the meeting, in conversation upon examination of the stone, stated that the invocation to the Virgin Mary was in harmony with the religious thought of the Norsemen in the later part of the Middle Ages, but could not be attributed to the present Lutheran Scandinavians, nor would it be likely to be placed in the inscription if it were a modern forgery.

This rune stone, probably almost 5½ centuries old, has been deposited by Mr. Holand in the Museum of the Minnesota Historical Society in the fireproof New Capitol.

WARREN UPHAM.

St. Paul, Minn.



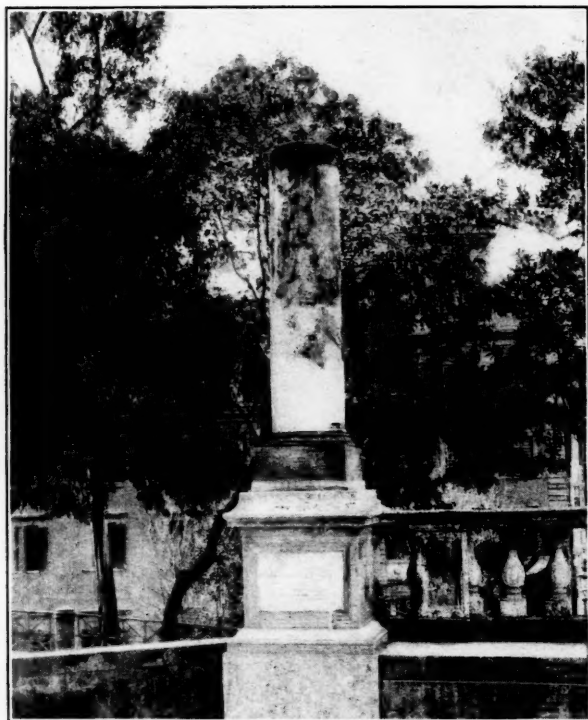


FIG. 2. MILESTONE ON CAMPIDOGGIO, ROME

ROMAN MILESTONES

IT WOULD not be unnatural to assume that when the great system of Roman roads was developed in conjunction with the growth of the army, the formal Roman mind would create coincidentally a system of road measurements and markings. The military roads began as far back as the IV Century B. C.—the Via Appia was built in 312—and a fair assumption would be that milestones came into use only a little later. It was formerly stated, owing to a misinterpretation of a passage in Plutarch,¹ that C. Gracchus was the originator of milestones. The passage merely says that Gracchus was very active in making roads, cuts, fills and bridges, that he built mounting blocks at frequent intervals—quite essential in a land where stirrups were unknown—and that he divided roads into miles and erected pillars of stone to mark the distances. But there is no proof that Gracchus introduced milestones into Rome. It is now quite certain that they much antedate him, for Polybius and Cato, who

¹Plutarch, *C. Gracchus*, 6, 7.

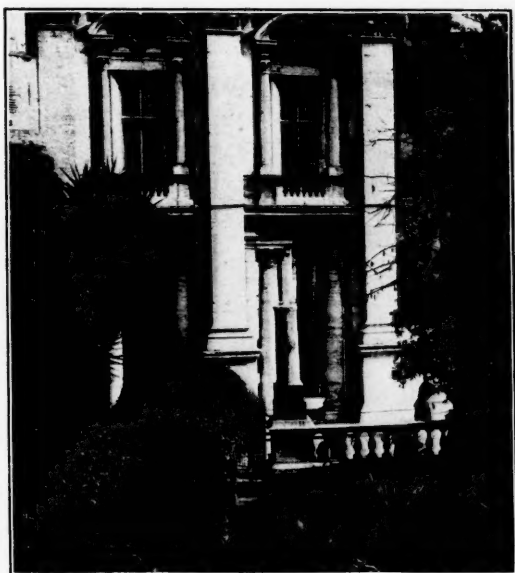


FIG. 6. RESTORED MILESTONE ON CAMPIDOGGIO, ROME

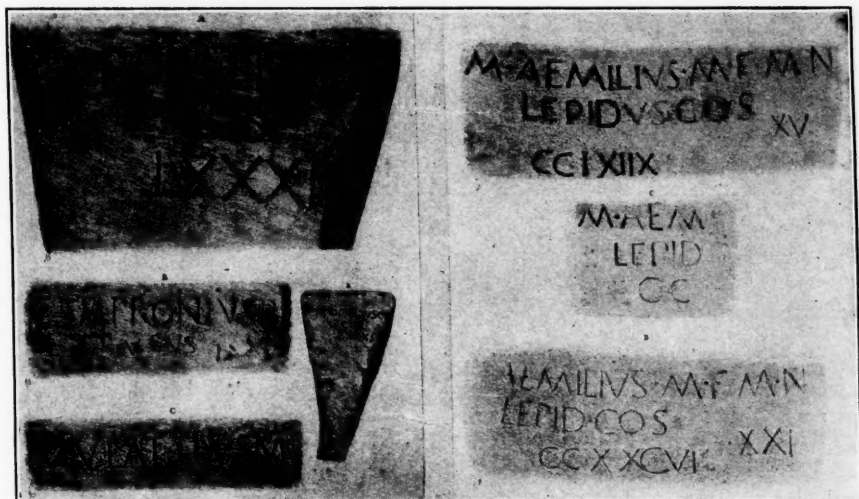


FIG. 4. POPILIUS MILESTONE INSCRIPTION

FIG. 5. RECENT INSCRIPTION

both died before Gracchus, mention them as though well known. Indeed, there is in existence a stone from the Via Appia showing the consul name of 184 B. C.² (fig. 1). This is thought to be the earliest extant milestone. But, whether they have been destroyed, or whether their use was restricted, republican milestones are very rare. Only 13 are reported in the first volume of the *Corpus of Latin Inscriptions*. Whatever their earliest date, the custom of using them seems to have been indigenous on Roman soil. It may have risen independent'y elsewhere, for columns placed at regular intervals but without inscriptions have been found in Egypt by Mr. Petrie³ and there was something of the kind in India, but early republican Rome had too little communication with the East to derive the use of milestones from there.

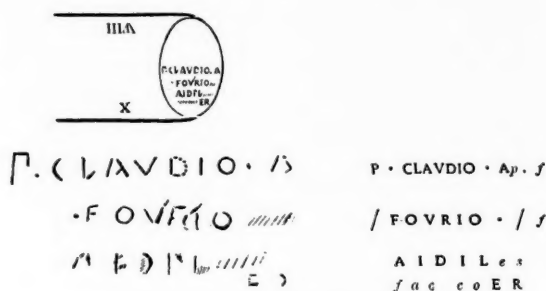


FIG. 1. MILESTONE OF 184 B. C.

As the name indicates, these stones were placed every thousand paces (4850 English ft.) from the beginning of the road, the measurements, in the case of Rome, being made from the gate in the "Servian" wall where the road left the city. The great golden milestone put up afterward in the Forum had nothing whatever to do with the system of milestones on the roads which left Rome. It probably had inscribed on it a list of the great roads and the names of the chief towns on each, with perhaps the distance of each from Rome. In the provinces the measurements were made from the chief cities, or apparently, the cities undertaking the expense of erection.

Under the republic the erection and control of milestones was in the hands of the consuls, the proconsuls, or, in the earliest stones, the aediles. During the empire the *curatores viarum* had charge, and though early Augustan milestones bore the S C or EX S C which indicated senatorial control, this is not found after the beginning of our era. The roads and their milestones from Augustus' time are under the indirect control of the emperor alone.

Four forms of milestones are found: cylindrical (figs. 1, 2), cubical, cippus shaped (fig. 3) and conical. The conventional form is the cylinder, sometimes with a square base for insertion in the ground, and frequently with a simple moulding at the top—perhaps almost always, for very many stones have the top broken off. Some of the earliest cippus shaped stones

²C. I. L. 10,6838 and supplement, p. 1019.

³Hirschfeld *Die römischen Meilensteinen*, p. 2.

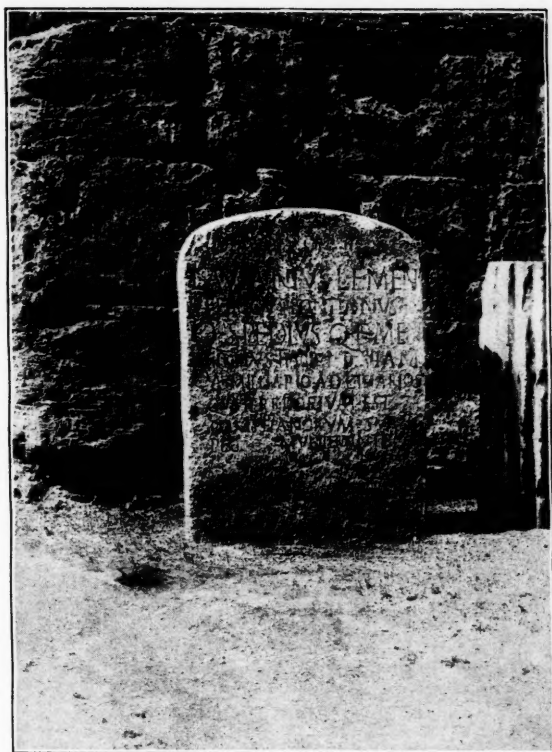


FIG. 3. CIPPUS OUTSIDE STABIAN GATE, POMPEII

have the lower part pointed into a wedge for driving into the ground (fig. 4). Different periods or different emperors have their favorite forms.

There was no standard size. Of the recorded cylindrical milestones, the height ranges from 14 in. to 13 ft., and the diameter from 5 in. to 2 ft. The cippi range in height from 2 to 6 ft. and in breadth from 4 in. to 2 ft. Cone shaped stones were usually low and truncated. Milestones were naturally constructed of some durable material—travertine, marble, granite—found near the place where they were erected.

The inscriptions vary greatly in different periods and under different officials. It would be tempting to say that the earliest milestones have the simplest inscriptions, and that there is a gradually increasing elaboration. In the main, this is true, for in the republican milestones the conventional inscription is the name of the founder of the road or of the official in charge, with the distance, as in the well known Popillius stone of 132 B. C. (fig. 4). But another stone of the same official and the same date shows a very elaborate inscription, which is as much elogium as milestone. The simplest possible form contains only a number.—XXVIII.⁴ A more

⁴C. I. L., 5, 7985.

In the Orient we find bilingual inscriptions in Greek and Latin;¹⁵ or the inscription is wholly in Latin while the distance is given in both languages.¹⁶ In a stone found in Lycaonia¹⁷ the inscription is in Latin only and the distance in Greek only, PE = 105. All Greek inscriptions are exceptional.

Milestones, when the original location and inscriptions are certain, are manifestly valuable as original documents, and whether the location is known or not, are especially valuable for the titles of emperors. Their value is notably great in the provinces, for of the 4000 extant stones recorded in the *Corpus*, all but 600 are found outside of Italy. In Gaul practically every emperor from the time of Claudius is represented in

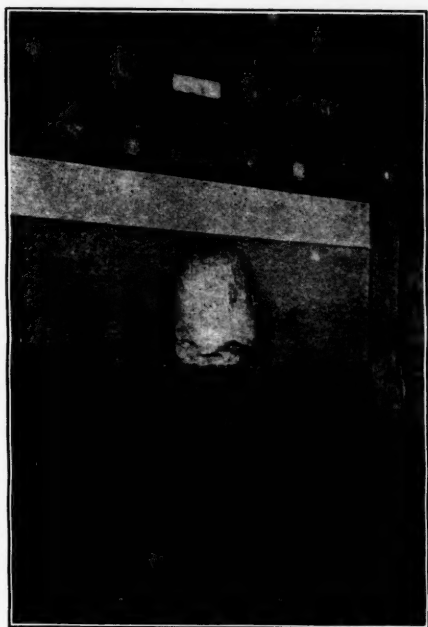


FIG. 7. MILESTONE, LATERAN MUSEUM, ROME

milestone inscriptions. Hence it is clear that they are valuable documents for studying the spread of the Roman Empire and the growth of the provincial system. And they throw interesting light on the general Roman custom of establishing at once military roads in a conquered territory.

But they are not a safe topographical evidence unless used with great care, as many milestones have suffered changes. Their form is not always distinctive enough to identify them if they are not found *in situ*, and it has already been seen that the inscription does not always betray a mile-

¹⁵C. I. L., 3, 7183, 218, etc.

¹⁶C. I. L., 3, 312, 464.

¹⁷Ramsay, *Eastern Provinces*, p. 173.

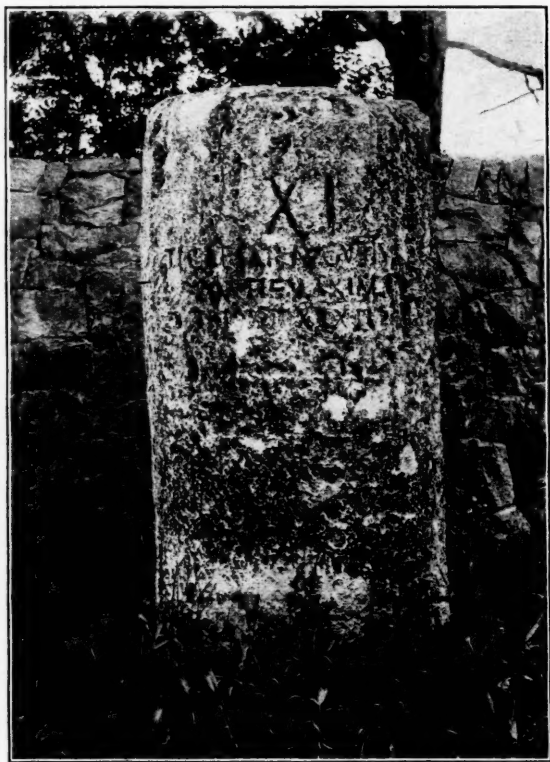


FIG. 8. ELEVENTH STONE ON VIA LAURENTINA

stone. They were in antiquity notoriously confounded with boundary stones. And there were some later well-meant but unfortunate restorations of inscriptions.¹⁸ Figure 5, for example, shows how an old inscription has been recut on the left side. In recutting, the forms of the A and the P were changed from the original and I was cut instead of the original **I** (CCIXIIX instead of CC **I** XIIX), thus obscuring date evidence from the forms of the letters. A and B (fig. 5) were originally on a road 18 (286-268) miles apart. They seem to have been carried to some other road and placed 15 and 21 miles respectively from the terminus. There are some stones which have two different inscriptions on opposite sides¹⁹ or one above the other on the same side, in which case the stone has sometimes been turned upside down and recut.²⁰ Then there are palimpsests formed by recutting a worn stone,²¹ by clipping away the original letters, or even by filling in the old letters with cement and then recutting.²²

Not much topographical proof has been obtained from milestones near Rome, as very few have been found *in situ*. The location of the first

¹⁸ C. I. L., 1, 535.

¹⁹ C. I. L., 9, 5989-92, one of Augustus; one of the IV Century.

²⁰ C. I. L., 5, 8015.

²¹ Ritschl, tab. LVA.

²² C. I. L., 3, 10648.

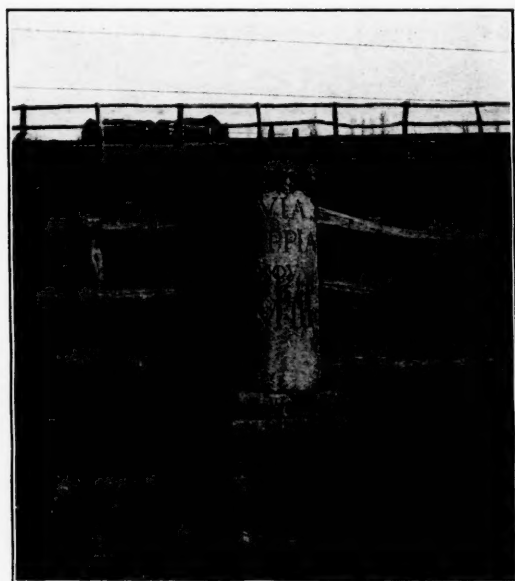
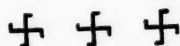


FIG. 9. MODERN MILESTONE, VIA APPIA NUOVA

milestone on the Via Appia is well known, and is now marked by an inscribed slab on an adjoining building. This gives, of course, an accurate location for the Porta Capena, which was, in fact, definitely located by this means by Mr. Parker. The stone now stands at the top of the Campidoglio steps on the right as one goes up (fig. 2). The other stone on the balustrade (fig. 6) traditionally from the seventh mile of the Via Appia, is thought to be a modern restoration. But most milestones have been discovered in the foundations of modern buildings or so removed from their original location as to lose the source value of accurate measurement. And when found they are usually in bad condition. The only milestone in the Lateran Museum, Rome (fig. 7) is battered almost beyond recognition. Almost no milestones are found *in situ* in Italy. The only one I know of near Rome is the eleventh stone in the Via Laurentina, put up by Tiberius and still legible (fig. 8). An interesting case of the survival—or modern imitation—of the ancient type may be seen in the present day milestones on the roads running out from Rome (fig. 9).

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THE AQUEDUCTS OF THE CITY OF MEXICO

THE Aztec City of Tenochtitlan, as is known, was situated on an island in the midst of Lake Texcoco. Since the water of this lake was extremely alkaline, it was necessary to bring in drinking water from a distance. This was done by means of an open ditch through which the water ran to the lake shore where it was transferred, in skins and other receptacles to canoes and thus transported to the City proper. Later, causeways were built connecting the island with the mainland and on these the aqueducts were erected which brought drinking water to the town.

Two aqueducts supplied the City with water; one began at the springs west of Chapultepec and was known as the San Cosme Aqueduct. This waterway dates from considerably before the conquest, as Cortés in his letters to Charles V gives the following description of it: "Over the one causeway that gives entrance to this great City come two ditches made of lime and sand, each about two paces wide and of the height of a man, and through one of them runs a stream of very good water and sweet, about the size of a man's body, which supplies the main City. The other ditch is empty but serves when it is desired to clean the first." The date of construction of these ditches is unknown, we only know that they were rebuilt in the time of Moctezuma II, or Xocoyotzin.

When Cortés laid siege to the City of Tenochtitlan one of his first acts was to deprive the valiant Mexicans of their drinking water, which he succeeded in doing after a great struggle, and no more water entered the City until after the complete triumph of the Spaniards. "The first command Cortés gave to Guatemuz," says Bernal Diaz, "was that he should repair the ditch in which the water used to come from Chapultepec in order that the same should at once come into the City of Mexico." This waterway came from Chapultepec over the Verónica highway to the Tlaxpana gate and thence by the San Cosme gateway to the beginning of the Calle de Tacuba, where it terminated in a handsome fountain. This work was completed February 5, 1529.

But it was at once seen that this supply was not sufficient for the growing City, and it was planned to bring water from Churubusco; it is not known for a certainty if this was done; if it was, it was but for a short time. During the Government of D. Gaston de Peralta (1566-1568) he tried to bring water from Coyoacan but without success owing to the difficulty in securing a satisfactory gradient. His successor, D. Martin Enríquez (1568-1580) chose the springs of Santa Fé, and in 1570 the City enjoyed the benefit of this water.

This waterway was converted into an aqueduct, the work being commenced by the Marquis of Montes Claros (1603-1607) who carried the works up to San Cosme. This structure was completed by the Marquis of Guadalcazar in 1620. It had something over 900 arches and cost 150,000 pesos. It was 5 m. high and 6 m. 7 in the clear.

Medina (cited by Orozco y Berra) says: "Each arch was 8 varas [the length of the *vara* as now used is about a yard, 33.385 in.] wide, 6 high and



PART OF OLD AQUEDUCT ON THE CALZADA DE CHAPULTEPEC

$1\frac{3}{4}$ thick, the depth of the channel being $\frac{3}{4}$ of a vara.' Its total length was about 4 miles. At a later period this water was run in channels north and south from the fountain at the Calle de Tacuba, and also east of that street to the Plaza.

This interesting structure was destroyed in sections beginning in 1852. When the first section was demolished the fountain which was at the intersection of the Mariscala and Tacuba was removed west to Puente de Alvarado; from this point, as the work of destruction went on, to the Corner of Avenida de Buenavista in 1871; then in 1879 to San Cosme and finally in 1889 to Tlaxpana, the Churrizuresque fountain at this point being the last to disappear.

On one of the arches of this aqueduct was the following inscription:

"Reynando en las Es-
pañas la Catholica
Mag. del Rey
Ntro. Señor D. Phelipe V
El animoso, que Dios guar-
de, Governando esta Nue-
va España El Excmo. S. Conde
de Fuenclara, siendo Supe-
rintendente Juez Conserva-
dor de los propios de la No-
vilissima Ciudad de Mexico el

Sr. D. Domingo Trespalacios
y Escandon, Cavall^o del Orden
de Santiago se verificaron estos
Setenta y siete arcos, los quaren-
ta y dos de Oriente y los trein-
ta y sinco al Poniente.
Año de 1,745."

TRANSLATION

"During the reign in Spain of his Catholic Majesty, King Philip V, the Bold, whom God guard, and the Government in this New Spain of his Excellency the Count of Fuenclara, the Superintendent of Public Works being D. Domingo Trespalacios y Escandon, Cavallier of the Order of Santiago, these 77 arches were rebuilt, 42 on the east and 35 on the west in the year 1745."

On the fountain at Tlaxpana was the inscription:

"Reynando en las Españas la
Catolica y Real Magestad del Sr. D.
Felipe V, quien Dios guarde y Gober-
nando en este Reyno el Illmo. y
Excmo. Señor Dr. Don Juan Antonio
Visarron Y Eguiarreta Arzobispo
de la Santa Iglesia de Mexico,
Virrey, Gobernador y Capitan Gene-
ral de la Nueva España y
Presidente de la Real Audiencia
se reedificó este Tramo
de 27 arcos y se hizo de nue-
vo esta fuente en q. c^o el ag^a
á de Mai^o de 1737."

TRANSLATION

"Reigning in Spain his Catholic and Royal Majesty, Philip V, whom God guard, and governing in this Kingdom his illustrious excellency Dr. Juan Antonio Vizarron y Eguiarreta, Archbishop of the holy church of Mexico, Viceroy, Governor and Captain-General of New Spain and President of the Royal Audience, this section of 27 arches was rebuilt as well as the fountain in which the water ran May 1737."

On the fountain at Mariscalá and Tacuba were these words:

"Reinando e Las Españas i indias Orientales i Occidenta
les la Magd. Católica del Rey Dō Felipe III Ntro. Sob^o Sr.
por mādado del Ex^o. Sr. Dō. Diego Fernādes de Córdova Marqués
de Gvadalcazar Sr. birrey i Lugarteniēte Gobernador i Ca
pitā General desta Nveba España i Presidēte de la Real A

audiencia della se hizo, esta obra siendo Correg^{or} el Lido. Dō Gmo. de Monte Alegre i Administrador i Comisar.^o della Dō Fernādo Agvlo Reinoso Regidor desta Ciudad de Mexc^o Acabose Año de 1620."

TRANSLATION

"Reigning in Spain and the East and West Indies his Catholic Majesty King Philip III, our sovereign lord, by order of his excellency D. Diego Fernandez de Cordova, Marquis of Guadalcazar, his Viceroy, and Lt. Governor, and Captain General of this New Spain and President of the



FOUNTAIN AT CHAPULTEPEC

Royal Audience, this work was accomplished, the licentiate D. Guillermo de Montealegre being Mayor, and alderman D. Fernando de Angulo being Administrador and Auditor of this City of Mexico. It was finished in the year 1620."

This tablet measured 1 m. 55 long, 0. m. 64 wide and 0. m. 09 thick; it may be seen today in the National Museum. The initial letters are red. Mr. Marroqui in his work on the City of Mexico (*Ciudad de Mexico* I. 249-Note 2; 271) is of opinion that this inscription refers to the Alameda, where it was found, buried in the earth, in 1871, near the San Francisco entrance to that park.

The other aqueduct began near Chapultepec and ran along the highways of Chapultepec and of Belem to its termination at the Salto del Agua, which still stands.

This was finished in 1779 during the viceregency of Don Antonio María de Bucareli. Its length was 3 kilometers 908, and it had 904 arches. This structure also was destroyed in sections, although some 26 arches are still standing on the Calzada de Chapultepec about 2 kilometers from the Piedad gateway, or halfway between the City and the Chapultepec park. On one of the buttresses is the following inscription:

"Bonetes, Mojonera y Lin-
dero pertenec.º á la Hac.^{da} del
Vinculo de Miravalle.
Puesta por la N. Ciudad Año 1605
y en su edi-
ficio de Arcos el de 1767."

TRANSLATION

"Boundary lines of the Hacienda of the Vinculo de Miravalle. Placed by the Most Noble City, in the year 1605, and on these arches in 1767."

The average height of this aqueduct was 4 meters; the channel through which the water coursed was about $\frac{3}{4}$ of a meter wide by about one meter deep. The part standing today is utilized as a reservoir into which water is pumped from the underground mains, and from which the liquid is drawn by carts to water the neighboring highway.

Two of the original fountains stand today, one near the entrance to Chapultepec and the other near Belen prison, a street taking its name therefrom, "El Salto del Agua."

On either side of the last named are inscriptions which are interesting on account of the data they contain as well as on account of the curious distribution of the lines. The one on the north side reads:

"Reinando la
Catholica Magestad
del Sr. D. Carlos tercero
(que Dios guarde) siendo Vir-
rey, Gobernador y Capitan Ge-
neral de esta N. E. y Presidente
de su Real Audiencia el Excomo. Sr.
Baylio Frey D. Antonio María Bu-
careli y Ursua, Caballero Gran Cruz
y Comendador de la Tocina en el Orden
de San Juan, Gentil Hombre de la Cáma-
ra de S. M. con entrada, Teniente Gene-
ral de los Reales Ejercitos, siendo juez
Conservador de los propios y Rentas
de esta N. C. el Sr. D. Miguel de Acedo el
Consejo de S. M. y Oidor en ella; y siendo
Juez Comisionado el Sr. D. Antonio de
Mier y Teran, Regidor Perpetuo de esta



FOUNTAIN AT EL SALTO DEL AGUA

N. C. se acabaron esta Arquería y Caja en
20 de Marzo de mil setecientos setenta y
nueve."

TRANSLATION

"Reigning his Catholic Majesty Charles Third (whom God guard) being Viceroy, Governor and Captain General of this New Spain and President of his Royal Audience, his excellency Bailio Frey D. Antonio María Bucareli y Ursúa, Knight Grand Cross and Commander of the Fleece in the order of St. John, Gentleman of his Majesty's bed chamber, with entrance, Lt. General of the Royal Armies, being Judge Treasurer of this Most Noble City D. Miguel de Acedo of his Majesty's Council and Magistrate therein, and being Judge-Commissioner D. Antonio Mier y Teran, Alderman for life of this Most Noble City, these arches and canal were finished March 20th. 1779."

On the south side were the following words:

"Se advierte de distan-
cia desde la toma en la Alber-
ca hasta esta Caja 4663 varas
y desde el Puente de Chapulte-

pec 904 arcos- y habiendose
 hecho varios experimentos,
 para dar la mayor elevación
 y mas fuerte impulso á la Agua
 se consiguió el de vara y tres cu-
 artas mas de las que tiempo de es-
 ta nueva arquería tenía siendo así
 que se hallo que los Señores Gober-
 nadores anteriores la elevaron á la tar-
 jea poco mas de vara. De don-
 de se ve que en esta ultima cons-
 trucción se ha conseguidollegar á la
 de dos varas y tres cuartas de al-
 titud mas de la que en su origen
 tuvo, precediendo, (como va di-
 cho) varios prolijos y esqui-
 sitos experimentos."

TRANSLATION

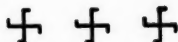
"Be it known that the distance from the reservoir to this fountain is 4663 varas and from the bridge at Chapultepec there are 904 arches and having made various experiments with a view to giving a greater elevation and the strongest current to the water, an elevation was taken of $1\frac{3}{4}$ varas more than previously existed, as the original elevation was but little over one vara. From which it will be seen that the present elevation is about $2\frac{3}{4}$ varas above the point of origin, the result (as has been said) of long and careful experiments."

Thus for the old.

Today, the City is preparing to furnish great quantities of purest water drawn from springs bubbling up in the bottom of Lake Xochimilco at an expense of millions of pesos.

A. L. VAN ANTWERP.

City of Mexico.



ROMAN PAVEMENT AT CIRENCESTER.—Early in September, 1909, workmen engaged in putting in a drain at Cirencester, Gloucestershire, came upon the edge of a piece of tessellated pavement, 4 ft. below the surface. A portion of Roman pavement some 10 by 7 ft. was thereupon laid bare, showing perfect symmetrical ornamental and floral designs in fine colors. "The main features are a broad plait, and bell-shaped flowers in alternate rows." Near by was a smaller pattern of less color. It is hoped that the larger specimen can be removed intact to a museum near at hand.



GREAT FALLS OF THE POTOMAC

Photo by Thomas F. Nelson.

WASHINGTON'S CANAL AROUND THE GREAT FALLS OF THE POTOMAC

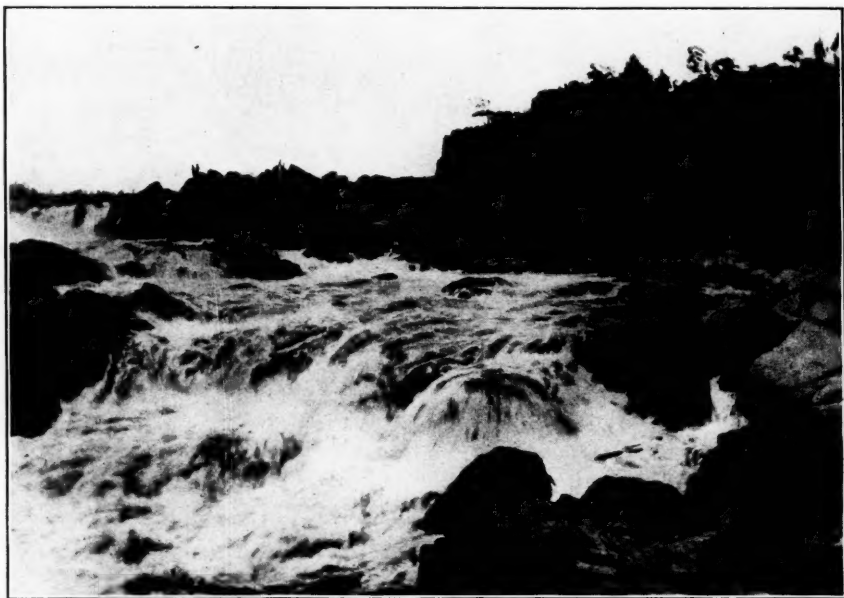
ON THE Virginia side of the Potomac river about half a mile below the Great Falls, lying deep down within a thicket of tangled underbrush, are huge crumbling walls of massive masonry and a great cleft in the solid rock carved out to a depth of well nigh 200 feet—all that remains of the first efforts of the promoters of an infant nation to establish a means of unobstructed water communication and transportation between the interior and tide-water.

No more convincing argument for the greatness of George Washington could be presented to the average mind than that furnished by following step by step the rise and decline of this now historic ruin—the Potomac Canal around the Great Falls of the Potomac river.¹

Inter-communication between the coast and the fertile valleys of the frontier was the theme and thought alike of statesman and husbandman for more than a decade prior to the separation of the Colonies from English rule. Natural water-ways were at that time resorted to as the only medium that afforded means of transportation, and this was restricted by reason of the cost in time and labor caused by the frequent obstructions and rapid currents in such streams as could be thus used even by canoes and very small barges. Slack-water navigation was therefore impossible upon natural water courses, hence transportation under existing conditions, even down stream, encountered obstacles almost insurmountable, while the snail-like pace and excessive labor of the return trip up-stream against the current by poling and warping, was scarcely to be considered at all.

Washington after surrendering to Congress his commission as commander-in-chief of the army, retired to Mt. Vernon with the avowed intention of spending the remainder of his days in the avocations of peace. It

¹ Visitors to this historic ruin can reach the spot by the "Old Dominion Electric" from Georgetown, D. C.



GREAT FALLS OF THE POTOMAC FROM THE MARYLAND SIDE

Photo by Miss A. Pratt.

was not a life of selfish ease which he contemplated but an opportunity to consider plans formed many years before, the dominant feature of which involved "the greatest good to the greatest number;" hence it is no surprise to learn of his resolve to visit at this time his lands situated in the Ohio Valley. This was not only a trip involving great hardship and considerable peril but it afforded the opportunity which he desired to obtain by observation some information concerning his "favorite plan" for inland navigation.

Washington's diary covers the details of the journey commencing with his departure from Mt. Vernon on the first day of September, 1784, and from its pages we learn that one object of his journey was "to obtain information of the nearest and best communication between the Eastern & Western Waters; & to facilitate as much as in me lays the Inland Navigation of the Potomack." This was uppermost in his mind, for he commenced his inquiries in that direction on the third day. On the 6th of September his diary tells us he remained all day at Bath and there examined the "Model of a Boat constructed by the ingenious Mr. Rumsey" to whom he gave the following letter:²

"I have seen the model of Mr. Rumsey's Boats constructed to work against stream;—have examined the power upon which it acts:—have been an eye witness to an actual experiment in running water of some rapidity; & do give it as my opinion (altho I had little faith before) that he has discovered the art of propelling Boats, by mechanism & small manual

² Washington, MSS. Letter Book in the Library of Congress, Vol. 6, p. 262.

assistance, against rapid currents;—that the discovery is of vast importance—may be of the greatest usefulness in our inland navigation—& if it succeeds, of which I have no doubt, that the value of it is greatly enhanced by the simplicity of the works, which when seen & explained to, might be executed by the most common mechanics.

“Given under my hand at the town of Bath, County of Berkeley in the State of Virginia this 7th day of Sept, 1784.

GEORGE WASHINGTON”

Here was the inspiration that created the canal around the Great Falls of the Potomac.

Washington continued his journey into Western Pennsylvania. Returning he arrived at Mt. Vernon on the 4th October “having travelled on the same horses since the first day of September by the computed distances 680 miles.”



LOCK NUMBER I

Photo by Thomas F. Nelson.

Prior to the 6th of September there is no suggestion that Washington ever contemplated as a part of his “favorite plan” any such improvement of the Potomac river as would permit navigation by boats of any considerable size, or that would overcome such an obstacle to unobstructed navigation as the Great Falls.

No such colossal work as that which was actually begun but a few months later in the construction of the canal around Great Falls could have been contemplated under the then existing conditions of navigation; Washington’s “favorite plan” was broadened and deepened by the actual experiment which he had just witnessed in the trial of Rumsey’s boat; hence when he returned to Mt. Vernon a month later the whole project

had been fully considered and he was prepared to act. In less than 3 months the Potomac Company was incorporated by concurrent legislative enactments in Maryland and Virginia and on the 7th of May, 1785, organization was effected and George Washington became the first President of the Potomac Company, in which capacity he acted until called to fill a more exalted place—that of First President of the United States of America.

The unselfishness of Washington could not be illustrated in a better manner than by referring to his embarrassment following the action of the Virginia Legislature which by a unanimous vote authorized the treasurer of the State to subscribe for certain shares of the stock "for the benefit of General Washington" in both the James River Company and the Poto-



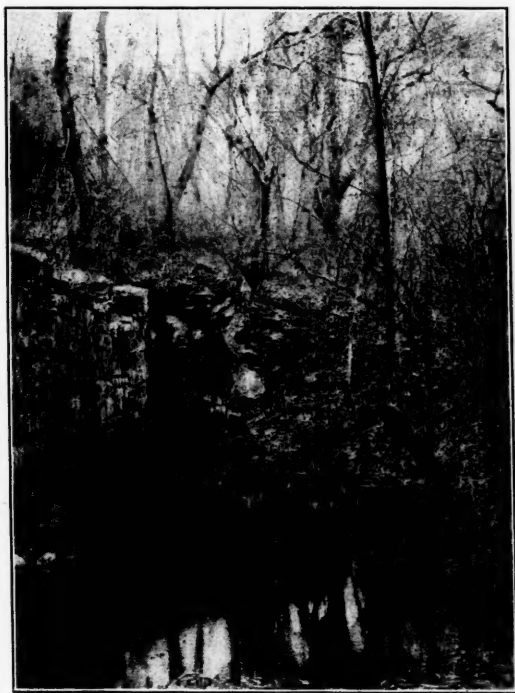
LOCK NUMBER 2

Photo by Thomas F. Nelson.

mac Company which they had just created by acts of incorporation. When the intelligence reached him of this action, he expressed the gratitude which he felt for the affection displayed, likewise the embarrassment under which he was thereby placed should he decline to accept the benefit proffered in the Act. He feared that his activity in the matter would be ascribed to motives far removed from those which actuated him. In a letter to his nearest personal friends in which he seeks their advice he expresses himself thus: "not content then with the bare consciousness of my having in all this navigation business acted upon the clearest conviction of the political importance of the measure, I would wish that every individual who may hear that it was a favorite plan of mine, may know also, that I had no other motive for promoting it, than the advantage of which I conceived it would

be productive to the Union at large, and to this state in particular, by cementing the eastern and western territory together, at the same time it will give vigour and increase to our commerce and be a convenience to our citizens."³

Washington did not live to see the fruition of his "favorite plan." The work on the canal around Great Falls was only in that condition which might be described as well nigh completed when he was laid to rest at Mt. Vernon. In November, 1797, the "Patowmack Company" recites in their petition set forth in the preamble to an Act of the Maryland General Assembly "that the company, to facilitate the transportation of produce down



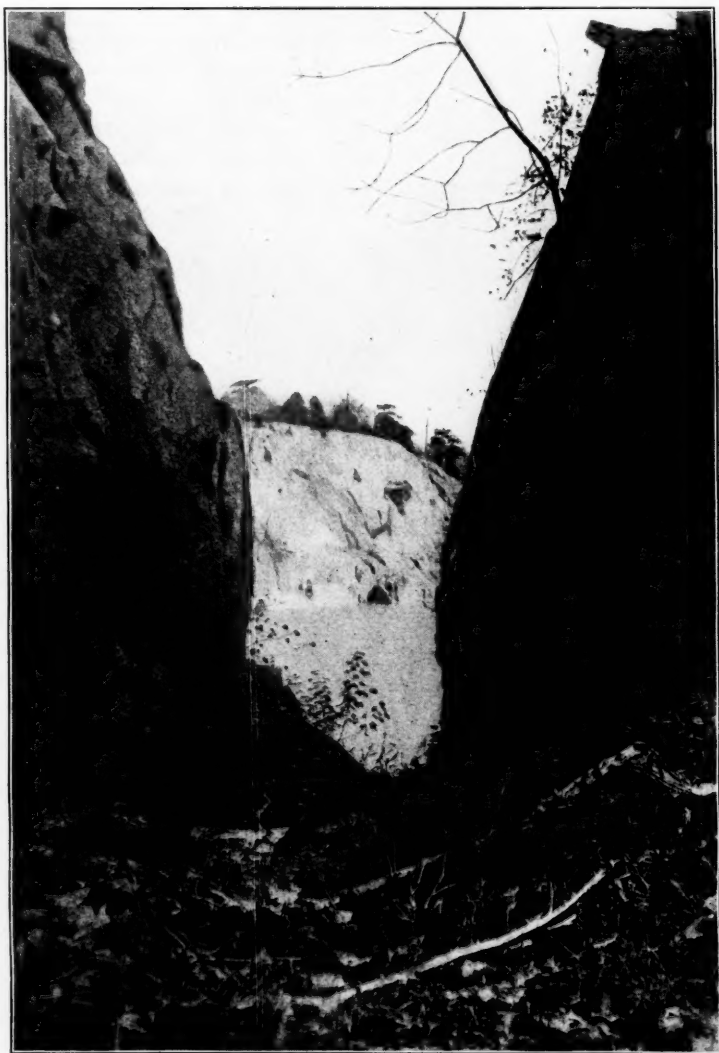
LOCK NUMBER 3

Photo by Thomas F. Nelson.

said river, have constructed an inclined plane from the lower end of the canal to the surface of the river below the Great Falls, by means of which machine all articles can be let down, and those not of great bulk or weight taken up with security and despatch; that a warehouse is also provided for storing such articles when found necessary, or when boats are not ready for transporting said produce down the said river."⁴ The locks around Little Falls

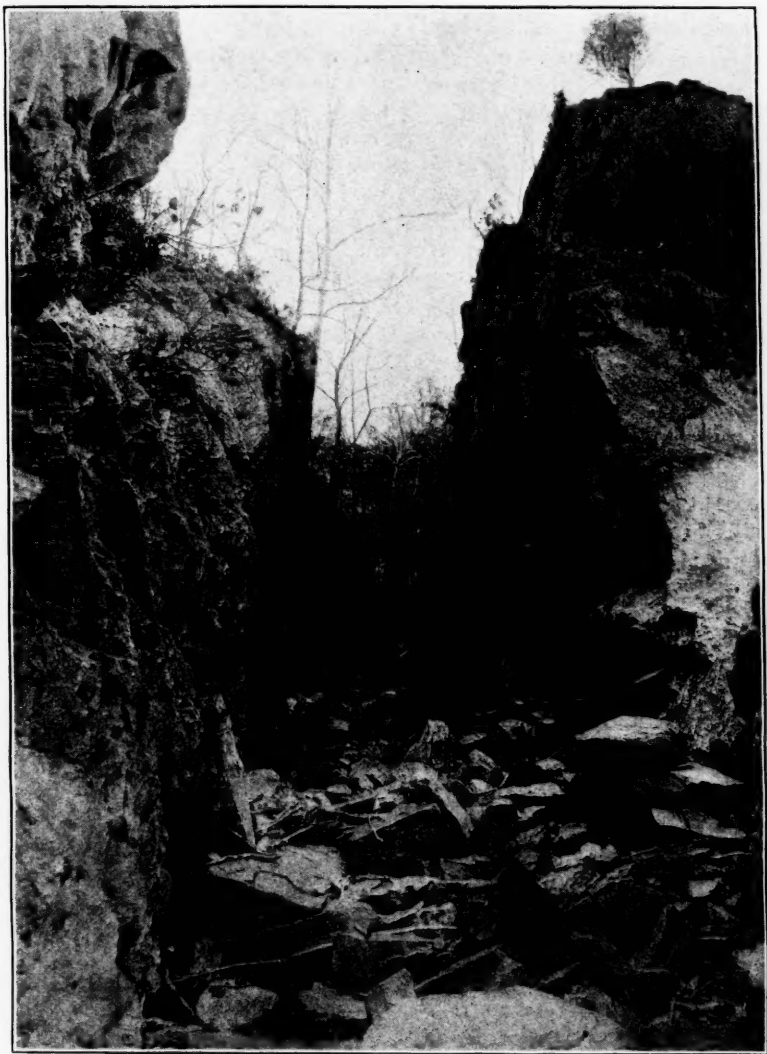
³ Washington's MSS. Letter book in the Library of Congress, Vol. 6, p. 335 dated twenty-second January, 1785, to Hon. Benjamin Harrison and another of same date to Hon. Wm. Grayson.

⁴ *Laws of Maryland*, Chap. 93, November, 1797.



LOCKS 4 AND 5 LOOKING OUT ACROSS THE POTOMAC TOWARDS THE MARYLAND
SIDE

Photo by Thomas F. Nelson



LOCKS 4 AND 5 LOOKING IN FROM THE POTOMAC RIVER

Photo by Thomas F. Nelson.

were at this time completed and in use. The time for completing the work of opening the Potomac river to navigation was extended by the same Act of the Maryland Assembly to January, 1803.

The great magnitude of the work involved in surmounting the obstacle to navigation interposed by these Falls is set forth in a Report of the Secretary of the Treasury by resolution of the United States Senate, 2 March, 1807, as follows: "The Company incorporated by the States of Virginia and Maryland for improving the navigation of the Potomac river has executed the following works: At a distance of 12 miles above the head of the tide which ascends about 3 miles above the city of Washington, the river is 143 ft. higher than tide-water. At that place designated by the name Great Falls, the boats passing through a canal one mile in length, 6 ft. deep and 25 ft. wide, descend 76 ft. by 5 locks 100 ft. long and 12 ft. wide each and re-entering the river follow its natural bed $8\frac{1}{2}$ miles. Another canal of the same dimensions and $2\frac{1}{2}$ miles in length brings them through 3 locks and by a descent of 37 ft. to tide-water. This last fall is distinguished by the name of Little Falls."⁵

The decline of the Potomac Company began almost simultaneously with the completion of the work on the Canal around the Great Falls and was finished when its charter and property was transferred to the Chesapeake and Ohio Canal Company in 1825 and the utilization of the natural bed of the Potomac river for transportation purposes was abandoned for still-water navigation offered by means of a canal constructed along the banks on the Maryland side of the river. The works on the Virginia side of the river were abandoned and now there remain only faint traces of their existence aside from the massive walls of cut stone and the great rift in the solid rock that marks the place where these great locks were constructed—mute but impressive monuments to one who stands unchallenged the greatest man in America as well as "The Father of his Country."

This bit of history may serve to call attention to the great question of the conservation and utilization of the water-ways of the Nation. Perhaps it may become apparent at no very remote date that Washington's "favorite plan" was not all a dream or as impracticable as would appear from the fact that this initial effort at the inland navigation of our natural water-ways was a failure and has been a ruin for well-nigh one hundred years.

What obstacle—except the great cost of construction—is to be surmounted in confining such natural water-ways within adequate limits and utilizing the enormous forces of nature therein contained to produce light, heat and power from every gallon of water that precipitation deposits within the water-shed of any stream and withholding the surplus precipitation of the snows of winter and the showers of the spring in storage canals which can be successively drawn upon as needed throughout the year. If this be too Utopian for the present day we are content to leave this record for the information of the historian one hundred years hence.

THOMAS FORSYTHE NELSON.

Washington, D. C

⁵ See also *House Report*, No. 228, dated May 22, 1826. Serial No. 142.

A STUDY IN ROMAN COINS OF THE EMPIRE¹

OUT of a large collection of old coins which came into my hands some three years ago, I have chosen a dozen pieces, dating from the early reigns of the Principate, upon which to base the appended discussion. These 12 not only represent one of the most famous series in all the history of numismatics, but are valuable as illustrating the development of the coinage-art in Rome.

By formal enactment of 15 B. C., either at the instigation of Augustus or with his approval, the coinage of bronze or copper money was relegated to the Senate solely, that of silver and gold being reserved by the Emperor. The senatorial mintage was thereafter for more than three centuries, *i. e.*, from Augustus to Gallienus, designated by the stamp of the letters S. C. upon the reverse, the initials of the formula SENATVS. CONSVLTO, "by decree of the Senate." The sestertius, the largest in the new classification, popularly styled "the large bronze" or "first brass," was, in its earliest stages, somewhat smaller than the American dollar. Its name had been formerly employed in the silver coinage of the Republic, where it originally denoted "two and one-half asses," at a time when this latter coin (bronze) had fallen to two ounces in value. But, as the bronze coins of that era fell still lower while silver money remained stationary in value the silver sestertius, in spite of its name, came to be valued actually at 4 asses. And, now that a new bronze coin was adopted under the revised system as a substitute for the old silver one, its present value of 4 asses was assumed, together with the old name, without reference to its original meaning. It was practically a Roman ounce in weight.

Next of the new bronze coins in value and size was the dupondius, whose name also is a relic of ancient nomenclature, formerly denoting "two pounds," *i. e.*, "two asses" when the as weighed one pound, but now meaning simply two asses irrespective of weight. Thus the sestertius and the dupondius represent respectively four and two asses, the latter coin being of half the value of the former and about one-half an ounce in weight. Both these pieces were of brass, "aurichalcum," described as "a fine yellow metal, composed $\frac{2}{3}$ of copper and $\frac{1}{3}$ of zinc.

Side by side with these two new coins of brass, the as, sometimes termed assarius and now but a remnant of its former austerity, was continued under authority of the Senate and adopted as a third in the series. It is surprising to find the dupondius and as of the Empire almost identical in size, both being a little less in diameter than our half-dollar. In weight also there was but slight difference, the as averaging only about 14 grains less than the dupondius. The difference in color, too, is often inappreciable. To such a degree do they resemble that both pass, without attempt to discriminate, under the common parlance of "middle brass." This seeming equality was of course offset by a disparity in actual value, for the metal of the as was inferior—copper alloyed with 30 per cent of tin and lead, so that it was really one-half the value of the dupondius. During

¹ Reprinted in part from University of Oregon Bulletin, by special permission.

the earlier reigns especially, the two varieties of "middle brass" are almost indistinguishable to the eye, but, after Nero's time, it came to be the practice to designate them by a difference in the mode of displaying the Emperor's portrait. The dupondius thereafter represented the Emperor with radiate crown, the as with laurel crown or with no head adornment at all.

A comparison of the selected coins will reveal some general features running through the entire group. The obverse, or chief face, invariably contains a portrait in profile, usually of the reigning Emperor, though other members of the imperial household, male and female, even deceased ones, were also honored. The portrait is surrounded on the edge of the coin by an inscription giving the name of the personage in whose honor the coin was struck, with partial or complete list of titles prefixed and appended. The reverses vary considerably—either depicting some historical and current event in allegorical representation, or commemorating some virtue or quality in the person honored, surrounded also, as in the obverse, by an inscription of corresponding nature. The S. C., pledge of mintage under senatorial supervision, always appears on the reverse. Thus we have on the one hand, in the obverses, a perfect portrait gallery of the imperial families, and on the other, in the reverses, a perpetual succession of history or biography exhibited in personification and allegory.

By chance, the reign of Trajan is reached in order of chronology before an example of the sestertius or "first brass" is met with in the collection, the first few coins all being "middle brass," *i. e.*, dupondii and asses. Three of these belong to the Julian-Claudian House, 3 to the Flavians, and 5 to Trajan himself, before the above-mentioned sestertius is reached in the list.

THE JULIAN-CLAUDIAN ERA

AUGUSTUS, 27 B. C.—14 A. D. TIBERIUS, 14—37 A. D.

The first in the series of Imperial bronzes is a "middle brass," belonging in a way both to Augustus and to his successor, Tiberius, for it is one of the several coins struck by the latter in honor of the deified founder of the Empire. Its portrait and inscription belong to Augustus, though it could not have been struck until after his death and therefore dates from the reign of Tiberius.

The obverse (Pl. I, fig. 1) bears the head of Augustus in left profile—a youthful face, rather resembling the portrait-bust in the Glyptothek at Munich—so chosen, no doubt, to indicate his restored and perennial youth as a god. He wears, as a symbol of his apotheosis, the "corona radiata," a crown with long, upward spikes, a frequent representation of divinity, first met with on oriental Greek coins of Alexander and his successors in Egypt and Syria. It eventually became a rather conspicuous emblem on Roman money, for Nero, as has already been remarked, inaugurated the practice of having the Emperor represented with radiate crown, as being deified while still living and reigning.

Though the first word in the inscription surrounding the head of Augustus is somewhat indistinct, it may be readily supplied, for the formula is abundantly attested from similar coins. The restored legend reads: DIVVS.AVGVSTVS.PATER, "the deified Augustus, Father." The lettering is in the large, clear style prevailing in the coinage of the early Principate and made possible by the greater simplicity in the list of titles.

DIVVS we shall have occasion to note in the next coin also, a coin of Caligula's reign. Both "divus" and its feminine form "diva" were titles indicative of deification, a distinction frequently accorded after the death of an Emperor or his wife, or, less frequently, some other member of the imperial family. The presence of the name in inscriptions naturally relegates the date of a monument or coin to a time subsequent to the decease of the person so designated. Conversely, its absence from a disputed inscription is often evidence of a date contemporaneous with the life of the person named.

Since the conferring of the complimentary epithet of Augustus on January 16 of 27 B. C., Octavius had allowed it to supersede all his other possible titles. In the same degree it was coveted by his successors, first as a family name by the Claudian-Julians and thereafter by all the line of Emperors.

The term PATER expresses much more than the filial duty of Tiberius to his adoptive father. It must be remembered that the Senate, not the Emperor, was now responsible for the bronze coins, though individual Emperors may have advised or even dictated the types, and again it is also true that the Senate often followed the designs employed by the Emperor in the silver and gold coins. PATER is rather the echo of the honored title which Augustus bore in his lifetime—Pater Patriae, "Father of His Country." Taken in conjunction with the title DIVVS, it is suggestive that the now translated Augustus was taken to be a parental god of his nation.

In passing to the reverse (Pl. II, fig. 1) by inverting end over end, the axes of the two faces of this coin are found not to be exactly coincident—the head of Augustus must be tilted slightly downward to the left in order to bring the reverse quite "plumb." This lack of symmetric nicety characterized the coinage of the early Principate until greater precision came in under Nero and Trajan.

The reverse has a large altar occupying the center and upper portion flanked by the initial letters S. C, and with the abbreviated word PROVIDENT. in the exergue below. Certain irregularities at the top of the coin above the altar may represent flames, as may be seen in some coins of similar design. The frequency of the so-called "Providence type" marks it a popular device for the reverse. Down through the list of reigns it recurs again and again, now in an abbreviated form, as here, or at other times with the entire formula, PROVIDENTIA.AVGVSTI, or perhaps PROVIDENTIAE.DEORVM. This Augustan coin probably conveys, in the presence of a lighted altar, and with the dedication expressed in the dative case, the universal feeling that, in Augustus, the gods had given

to the world a personal evidence of their "foresight," or it may denote the present "providence" now exercised over his people by the deified Emperor.

As for the S. C., coins of succeeding reigns reduced them to much smaller proportions, but in the money of the earlier Julian-Claudians they are very prominent, often forming the sole device of the reverse and occupying the entire center, as in the coin of Caligula next to be described (Pl. II, fig. 2). In this coin of Tiberius one is prone to use the word "huge" in describing them. They are $\frac{1}{4}$ the diameter of the coin in height, forming a very conspicuous feature of the reverse.

CALIGULA, 37-41 A. D.

It so happens that the first two of our series of Imperial bronzes are both in honor of deceased persons. As the coin of Tiberius, just described, was really in honor of Divus Augustus and contained the latter's portrait, not that of the reigning Emperor, so the next coin in chronological order (Pl. I, fig. 2), a middle brass, contains on its obverse the portrait and inscription of Germanicus, though its reverse proves it to have been struck in the reign of Caligula, long after the death of the former. Thus, by an interesting chance, our series denies us portraits of the two tyrants, Tiberius and Caligula, on coins of their own reigns, but has given us instead the images of two of Rome's grandest men, Augustus and Germanicus. This one coin holds the unique distinction in the series, of being the only piece struck in honor of a male relative of the Emperor, though there are several coins in honor of female relatives.

Germanicus, the nephew, adopted son, and heir-apparent of Tiberius, is shown on the obverse in left profile and with bared head. As Baumeister shows, Vol. I, p. 231 of his *Denkmaeler*, where a reproduction of this coin is given, there is marked resemblance between this coin-portrait of Germanicus and his marble statue in the Louvre.

The Inscription on the obverse, as abbreviated, reads as follows: GERMANICVS.CAESAR.TLAVG.F.DIVI.AVG.NEPOS. Written in full, it would read, Germanicus Caesar, Tiberi Augusti filius, Divi Augusti nepos, "Germanicus Caesar, son of Tiberius Caesar, grandson of the Deified Augustus."

Nero Claudius Drusus, brother of the Emperor Tiberius, had been named Germanicus by decree of the Senate, in honor of his military successes against the Germans, and his descendants were accorded the privilege of inheriting the same as a family name. The prince in whose honor this coin was struck was the elder son of this Drusus, appropriating Germanicus as a praenomen or first name. Happily the name was his, not only by right of succession, but in just reward for his victories in the same field. We shall find in the next coin (Pl. I, fig. 3) the Emperor Nero employing the same name, for he was great-grandson of the first Germanicus. The name becomes a familiar one in the series, for, although Nero was the last to claim it by inheritance, later Emperors were proud to own the title after exploits, real or delegated, on Germanic soil.

Though our present Germanicus was properly, on his father's side, a descendant of the Claudian-Livian-Drusus families and only a Caesar by descent through four women, his adoption into the Caesar family caused the latter to prevail in the formula of his name. And curiously enough, this name Caesar, so imperishable, devolved upon Germanicus through three several steps in adoption. For, first, Augustus became a Caesar by will of his great-uncle, the Dictator; Augustus in turn adopted Tiberius; and by the same enactment, Tiberius made Germanicus his heir and Caesar—hence he is called "son of Tiberius Augustus" on the coin. After the extinction of even this adopted branch in the death of Nero, the name, as we shall have evidence from our coins, came to be an imperial title and all but necessary to the throne, in much the same way that Ptolemy, after the first monarch of that name, became the legacy of succeeding sovereigns of Egypt, or that of Arsaces was prefixed to the royal line of Parthia.

In styling Germanicus, as here, the son of Tiberius Augustus, it must be noted that Augustus was thus early an established crown-name. "The August One" had now become similar in usage to our own modern formulae, "His Majesty," or "His Royal Highness."

Thus far, there is nothing, even in the inscription, to indicate that the Germanicus of the coin was deceased. This is only to be deduced from the reverse, which dates the coin beyond question in the last months of Caligula's reign, at least 21 years after Germanicus' death. While the Senate may have seen in Germanicus a means of flattering the reigning prince, for Caligula was his son, it is yet eloquent tribute to the lasting memory of a man who had been the idol of the army and the people's favorite thus to have his portrait reproduced upon the national currency almost a quarter of a century after his death.

But, while the coin thus does honor to the hero Germanicus, it also speaks, through these nineteen centuries, of the infamy in which Tiberius was held. It will be noted that the inscription of the obverse names Augustus as Divus but Tiberius simply as Tiberius Augustus. Now, as the latter also was dead when this coin was struck, we have here, as in all other contemporaneous monuments, evidence that the title Divus, though granted to Augustus, was yet denied to Tiberius.

Again, as in the coin of Tiberius, we find in this money of Caligula that there is not exact coincidence in the axes of the two faces. Tiberius, coin had to be tilted slightly to the left and now Caligula's coin as much to the right, in order to bring the reverse exactly upright. These facts, together with others to be noted, prove, as already remarked, that the Imperial coinage was yet immature and had not reached that nicety and perfection which were attained under Nero and, still later, under Trajan.

Huge initials S. C occupy the entire center of the reverse (Pl. II, fig. 2) where later some allegorical figure or historical group is almost invariably to be found. The largeness and prominence of the S. C are a distinguishing feature of these earlier bronzes, a feature that would quickly identify an otherwise doubtful coin. The privilege of coining the baser metals was a prerogative in which the Senate seemed to revel, as a child

in a toy. The coins of later reigns find the S. C. more in the nature of addenda, suggestive of the diminuendo in power through which the Senate was doomed to pass.

The mode of inscribing the legend in the margin of this reverse differs from that which finally became stereotyped. Instead of beginning at the left below the center and continuing to the right around the rim until meeting with the first letters at the bottom, in this instance the inscription begins a little to the left of the top. Again, as a rule, the device of the reverse, as is also the case with the portrait on the obverse, necessitates an open space below, occupied later by the S. C., so that ordinarily the gap quite plainly marks the beginning of the inscription on the left as well as its ending on the right. In Caligula's coin, however, the inscription makes a complete circle around the rim, a peculiarity frequently found on coins of the Claudian family. Other coins of these earlier Emperors have the inscriptions reading in quite the contrary direction, *i. e.*, from right to left. These peculiarities are added proofs that the coinage of this period was in a transitional stage. More uniformity in style was developed under later Emperors.

The inscription of the reverse reads, with the suppressed portions supplied in parenthesis—a practice to be employed in the discussion of all the succeeding coins: C(aius). CAESAR. DIVI. AVG(vsti). PRON(epos). AVG(vstvs). P(ontifex). M(aximvs). TR(ibvnicia). P(otes-tate). IIII. P(ater). P(atriciae), "Gaius Caesar, great-grandson of the Deified Augustus, (himself) Augustus, Chief Pontiff, with Tribunician Power for the Fourth Time, Father of His Country." After our study of the obverse and its Germanicus, it is rather a surprise to find the reverse ascribing the coin to quite another personage. Above all, one is hardly prepared to recognize that personage under so dignified a title—the execrated prince more familiarly known to us by the nickname of Caligula, "Little Boots."

It is a significant fact, as evidenced in the above inscription, that no one title was adequate to convey the full relationship which the person tersely styled in modern phrase a Roman Emperor bore to his subjects. Tsar or Kaiser or Sirdar are sufficient today to represent these several potentates, but it took a combined group to connote the complete office of the Roman Emperor. Each one title presented but one feature of his official composite. Imperator meant the ruler only from the military point of view, or Consul only from the civic, or Pontifex Maximus only from the religious. Caligula is here named under five out of a possible seven, if we may rank Caesar and Augustus as titles, as they certainly appear to us, and if we also note that Imperator and Consul are missing. It was not often that the entire formula was employed on a coin, for the space was not large enough to accommodate it all, unless the Emperor's own cognomina were to be crowded out. A very frequent ruse was literally to "divide the honors" between the two faces of the coin, apportioning some to the obverse and the remainder to the reverse. The types were quite varied. Some Emperors, like Trajan, enjoyed using the complete

list; but, again, there were others, like Antoninus Pius, who preferred a selection of their multifarious titles. There was great room for variety between HADRIANVS. AVGVSTVS and IMP. CAES. NER. TRAIAN. OPTIM. AVG. GER. DAC. PAR. P. M. TR. P. COS. VI. P. P. S. P. Q. R.

Caligula's coin disposes of the several titles in an order which became in time pretty well stereotyped. Caesar and Augustus were still in the nature of inherited family names at this time, but their position in the list of titles is practically that assigned them by later Emperors who had no such claim. Caesar usually precedes the personal names, while Augustus follows these latter, preceding the list of purely titular names. Next after Augustus comes Pontifex Maximus, usually awarded on accession to the throne and designating the Emperor as the highest religious functionary in the state. Then comes the Tribunician Power, which was the euphemistic way of assigning to the most patrician of all patricians the prerogatives that anciently devolved upon the Tribune of the Plebs. It could not be expected of the Emperor that he should become a plebeian in order to be made a Tribune; therefore, to circumvent this defect in the Constitution, he was deliberately "invested with Tribunician Power." It was in many respects one of the most powerful titles held by the throne. For that reason it was uniformly renewed each year thereby offering a means of designating the year of the reign. Thus, Caligula's coin dates from the year of his Fourth Tribuneship. The placement of the titles that are missing in Caligula's formula, we shall note as they occur in the succeeding coins. Whatever the number of honors and howsoever long, P. P usually closes the list. "The Father of the Country" was a dignified title and rounds off the group most becomingly.

While it was impossible to date our first coin with any more exactness than that it was struck after the death of Augustus and during the reign of Tiberius, *i. e.*, anywhere from 14 to 37 A. D., this second piece affords us an example of how the dating may be determined, often with very close approximation, from the titular formulae. In Caligula's case, the title Pontifex Maximus was conferred at his accession, along with that of Imperator and Augustus, so that a coin of his containing these titles may date from any time in his reign. Turning to the Pater Patriae, we are informed from other sources that this laudatory title was granted Caligula in January of 39, about nine months after his accession. The coin therefore must have been struck subsequent to that date. But there is yet closer determination in the TR.P.III. Caligula was decreed the Tribunician Power at his accession to the Principate, 18 March, 37, and renewed it annually on that same date. His Fourth Tribuneship would therefore begin on 18 March, 40. As he was murdered on 24 January, 41, the coin dates from the last ten months of his reign. Baumeister (*l.c.*) dates it actually within the month of his assassination.

NERO, 54-68 A. D.

The reign of Claudius, Caligula's successor, is unrepresented in the series. The third coin of the Empire belongs to Nero—a very handsome

assarius in beautiful preservation and belonging to a very celebrated group of coins, various types of which may be seen in popular works.

The obverse (Pl. I, fig. 3) presents in quite high relief a finely idealized, laurel-crowned head of Nero in left profile, surrounded by the following inscription in very distinct letters: NERO. CAESAR. AVG(vstvs). GERM(anicvs). IMP(erator). Other coins of the same group present the right profile and insert other titles in the inscription.

Baumeister, under the article *Augustus*, p. 234, dates this type of coin, known especially by its reverse, from the last years of Nero's reign. It is at least noticeable for the absence of the beard, which characterizes Nero's portraits before his twenty-second birthday, *i. e.*, 59 A. D. The bestial Emperor is certainly a handsome man, to judge from this coin, much more prepossessing indeed than in his two Uffizi Gallery busts or that in the British Museum. His hair is combed in that peculiar fashion of his—in a succession of waves clear across the arch of the forehead from ear to ear, and clustering low down on the back of the neck. These features, so prominent in his portrait-busts, are quite distinct in this coin.

We here for the first time in our collection meet with the laurel-crown. Observe that it was worn, not in a line parallel with the brow, in the mistaken idea we sometimes have of the crown, but inclines at an angle of 45 degrees, so that it rather encircles the back of the head and the ribbon-bow, securing the two ends where they meet, falls gracefully down on the back of the neck. The laurel-crown is certainly much more becoming than the radiate-crown which Nero was the first of living Emperors to assume in his coinage-portraits. . . .

Except in the absence of the beard, the obverse affords no very precise way of dating the coin, for Nero is not here designated by his Tribunicial or Consular offices, as was Caligula in our second coin.

The reverse (Pl. II, fig. 3) is highly prized on account of its contributions to history and archæology, for it supplies evidence not elsewhere to be found. Its device is a representation of the little Arch or Temple of Janus in the Forum, affording a valuable supplement to the meager references to this structure in the Classics. It is therefore interesting to read from our coin that the Janus was not so much a temple as a double archway, in fact merely two side-walls of masonry, with a door at either end. These doors or gateways were taller than the side-walls by more than a third of their height, while gratings occupied the intervening space. Supported on these side gratings and the arches of the two end-gates there was an entablature of two divisions, the ornate design of which may be seen in clearer examples of the coin.

There are two types of the inscription of the reverse. Popular hand-books invariably reproduce the one which reads: PACE. P(opvlo). R(omano). TERRA. MARIQ(ve). PARTA. IANVM. CLVSIT, "Peace for the Roman People having been acquired on land and sea, he closed (the Temple of) Janus." Our coin introduces an interesting variant which seems not yet to have found its way into our *vade mecums*. We have here, substituted for TERRA. MARIQ(ve). "on land and sea," the one word VBIQ(ve), "everywhere." . . .

The occasion of closing Janus's Temple can only be referred to the successful termination of the Parthian War under the direction of Corbulo, Nero's general in the East. A piece of money is thus made to contribute to our fund of historical knowledge, for Tacitus omits mention of this particular closing of the Janus, while, by reason of his omission, doubt had thereby been cast upon the authority of Suetonius (*Nero*, 13), who does assert its closing. Concluding his narrative of the visit of Tiridates, the Parthian King, to Rome in 63 A. D., Suetonius has these words: "As a result of these proceedings, Nero was saluted Emperor, his laurel-crown was deposited in the Capitolium, and he closed the Janus Arch, as if there were no wars now remaining." A difficulty is presented in the counter statement that the presentation of the crown to Tiridates, which Suetonius loosely ascribes to this year 63, did not occur until the year 66. A consequent vagueness is thus imparted to the dating of the closing of Janus. The only safe conclusion is that the coin dates after 66 A. D., when the Parthian War was ended, and before 9 June, 68, when Nero died. Eckhel lists it among the "*nummi vagi*," *i. e.*, the scattering coins.

The quotation from Suetonius has another connection with our coin, in that it helps us explain the position of the title *Imperator* in the formula. There can scarcely be any doubt that, where *Imperator* stands at the beginning of the list, as it does in our next coin, a middle brass of Titus (Pl. I, fig. 4), where it is separated from all the other titles, the rulers who thus placed it, regarded it more in the light of a *prænomen*, in other words, as a part of their name and not as a title at all. On the other hand, its position at the close of any formula or at least anywhere else than at the beginning, is more consistent with quite another usage—that of the old Republican times, when a general was hailed as *Imperator* by his troops after a victory. This acclamation on the field was supplanted under the Principate by a decree of the Senate and the title *Imperator* was affixed to the previous honors in the nature of an addendum. Successive decrees were indicated by numerals attached, as *e. g.*, IMP.III. Nero's placement of this title on the obverse of his coin is in harmony with the historical act commemorated on the reverse, for it was a feature of the same event.

It may be noticed finally that the S. C are divided and flank the Janus on right and left, occupying the same position and having the same proportions which were preserved to the end of the brass coinage, except that they were often placed in the open space below the device.

THE FLAVIAN DYNASTY

TITUS, 78-81 A. D.

Our series omits the three hurried reigns of Galba, Otho, and Vitellius, whose coins are rare by reason of the short periods of their incumbency, and brings us to the Flavian Emperors, failing however to present the founder of the House, Vespasian himself. There are three coins of this era, one of Titus and two of Domitian.

It will be remembered that the three coins of the Julian House, just

described, all bore the Emperor's portrait in left profile. The coin of Titus (Pl. I, fig. 4) next to engage our attention is the first of the series to present a right profile, a practice which happens to be observed until quite near the end of the collection. In actual fact, such was not a fixed rule, for either profile was employed according as the wish of the Senate or Princeps dictated. The right profile seems however to have prevailed, judging from the great preponderance of such pieces in the collection. They present an unbroken line from Titus down to the Constantinian era, when a coin of Licinius again introduces the left profile.

The Flavian's portrait is in high relief—a massive head upon a thick neck, in which may be detected quite a little resemblance to his various busts. He wears the laurel-crown, which, since Nero, had become a means of distinguishing the *as* from the *dupondius*. Titus's resemblance to his father, Vespasian, is very marked in this coin, as is indeed the case with his portrait busts. The coin would in fact be mistaken for one of Vespasian's but for one single letter in the inscription.

Titus inherited the full name of his father, which would lead to confusion were it not that the elder Flavian, following the practice of most of the Emperors, never used his *prænomen*, or first name, in official inscriptions, styling himself simply *Vespasianus*, with the accompanying titles of office and state. His elder son and successor, in order to avoid being mistaken for his father while the latter was still alive, had no other recourse than to designate himself *Titus Vespasianus*. The presence of the abbreviation *T* in inscriptions which are in other respects identical with those of his father, proves them distinctively Titus's own. So we find the inscription of the obverse reading: *IMP(erator). T(itvs). CAES(ar). VESP(asianvs). AVG(vstvs). P(ontifex). M(aximvs). TR(ibunica). P(otestate). CO(n)S(vl). VIII*, "the Emperor Titus Caesar Vespasian Augustus, Chief Pontiff, with Tribunician Power, Consul for the Eighth Time."

The letter between *IMP* and *CAES* is not clear, but, even were there no distinct traces visible, the space demands a letter. That letter can only be the initial of the name Titus, as, from a comparison with other inscriptions of this same period, no other title, either for Vespasian or Titus, is applicable at this point. Such a disposition of the latter's name is however frequently exemplified, while no confirmation can be made for any such formula for the elder Emperor. The letter *T* is therefore our only conclusive evidence for the correct ascription of this coin, for the remainder of the title, even the consular dating and the legend of the reverse, may belong equally well to both father and son. Vespasian died during his Eighth Consulship, while Titus, who had served seven terms as Consul during his father's lifetime, entered upon his eighth little over 5 months after his own accession, first January, 80. He died thirteenth September, 81, without having received an additional Consulship, so that the coin must date from within this period of 1 year and 9 months. The exact Tribunicial year is not designated and a closer approximation is therefore impossible.

The longer official title here given to Titus makes it possible to draw

comparisons between the practice of this Emperor and that of Caligula, as shown by their respective coins, an opportunity which Nero's shorter formula did not offer. The prefixing of Imperator as the initial title and the position of the ordinary prænomen must first be noticed. The usual family prænomen, such as Titus here, is not often to be found in the formal inscriptions of the Emperors, for there seemed a tendency to omit or even to suppress it, except when needed for purposes of distinction, as was the case with Titus. But where it does occur, it holds the second place in the group, between IMP and CAES. This interlacing of the two parts of the name, *i. e.*, the prænomen and cognomen, with Imperator and Caesar may be added proof that these latter were rather regarded as portions of the inherited or adoptive throne name. It is doubtless an error to call them titles—evidently that is only from our modernized viewpoint.

As for the cognomen, Vespasianus, we here, in Titus's coin, meet for the first time with the tendency to abbreviate even the more essential parts of the family name. Caesar and Augustus were now as with the value of prænomena, which it was the practice to abbreviate at convenience while such agnomina, or added names, as Germanicus or Dacicus (*cf.* GERM in Nero's coin), were similarly treated. But, to one not accustomed to the whims of epigraphic laws, it seems strange at first to find, as here, VESP for Vespasianus, and DOMIT for Domitianus (Pl. I, figs. 5 and 6). The narrowed limits of the coin naturally compelled a process of curtailing wherever possible, and, consequently, the longer the list, the more violent the abbreviations.

The reverse of Titus's coin (Pl. II, fig. 4) has for its device a winged Victory on the prow of a vessel, yet with the appearance as of flying and striding to the right. Her right foot is resting upon the deck of the ship; her left is lifted on tip-toe, as if a step forward has just been taken. She holds aloft a wreath in her right hand, while a palm branch in the other is resting over her left shoulder. Her garment is closely pressed to her form and streams behind her. The prow of the vessel has a curved end like a swan's neck. The whole device was very probably in imitation of the Winged Victory of Samothrace, or of the original coins themselves of Demetrius Poliorcetes. Such a conception of Victory, though oftener without the ship, is a frequent figure in Roman coinage. The S. C flank the figure of Victory, just above the height of the knees.

The inscription reads VICTORIA.AVGVST(i), "the Victory of Augustus," or "Augustan Victory." It is the first instance in the series of a type of reverse which became quite popular—the coupling of an abstract personification like SALVS or IVSTITIA, with the Emperor's title in the possessive genitive or as a modifying adjective.

If we would search for a definite event to which to ascribe this Victory, reference to the date already deduced from the obverse, *i. e.*, 80 or 81, would suggest some success against the Parthians by the Governor of Syria, the father of the future Emperor, Trajan, and we do know that the latter did win a battle about this time. But the curious fact remains, that all three members of the Flavian House employed this very same device on their different coins, but with the inscription VICTORIA.NAVALIS, in-

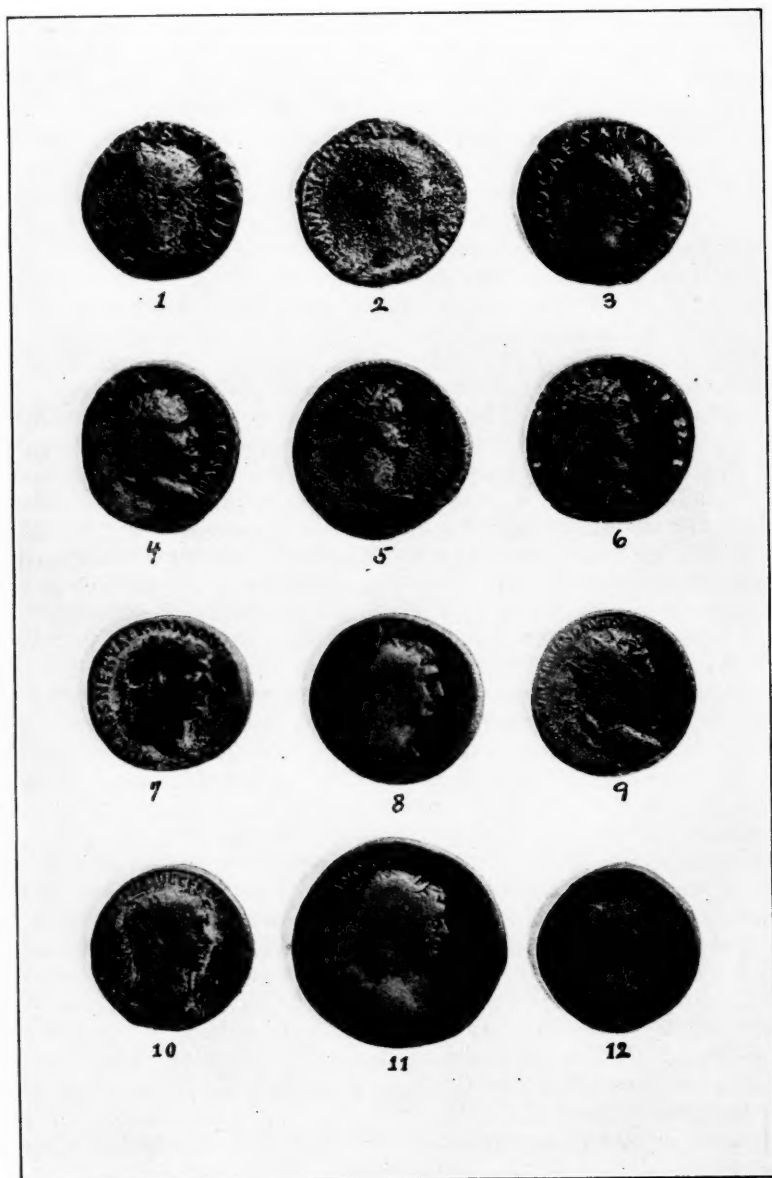


PLATE I
ROMAN COINS, OBVERSE

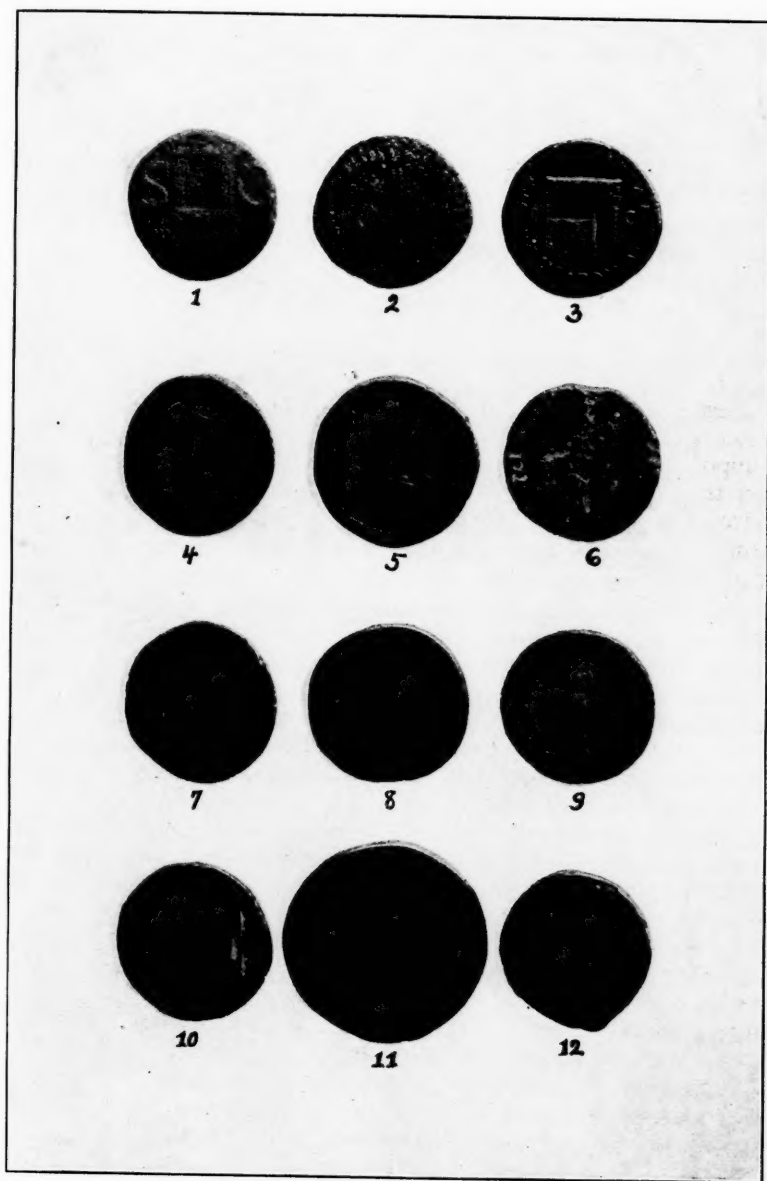


PLATE II
ROMAN COINS, REVERSE

dicating the repeated commemoration of some one naval battle. The prow on which Titus's *Victoria* is made to stand corroborates this interpretation. If so, the event must be looked for in the earlier reign of Vespasian—an event of such moment that it was recalled to the national currency long afterwards. The quest is rather baffling, unless we are to believe that a very minor engagement was quite unduly exaggerated. Stevenson, p. 871 of his Dictionary, suggests "either the great naval loss *by tempest* sustained by the Jews who had fled from Joppa to their ships when the town was attacked by Cestius, or the naval victory gained by the vessels of Vespasian over the barks of the Jews on Lake Gennesareth."

DOMITIAN, 81-96 A. D.

Vespasian's younger son, Domitian, the third and last of the Flavians, is conspicuous in the series with two pieces (Pl. I, figs. 5 and 6). Happily we possess in them the two species of middle brass of the same reign and therefore an excellent opportunity for the comparison of the two coins. The dupondius (fig. 5) is a trifle larger in circumference and considerably thicker than the as (fig. 6). One cannot successfully form any conclusions from the present color of the coins, for, after being exposed to various elements, a coin may have varied tints resulting. As they now appear, the dupondius is much darker and blacker; the as has more of a yellowish tint. According to the style now firmly established in Domitian's time, the dupondius introduces the Emperor to us in corona radiata, the as in the laurel-wreath.

The earlier of the two coins in point of time is the dupondius. Domitian's head is shown on the obverse, right profile, in high relief, the first instance in the series of the use of the corona radiata in the case of a living Emperor, though of course it had been employed ever since the custom had been instituted by Nero. And again it is interesting to note that the corona radiata too rests on the back of the head, at a very acute angle. One feature that catches the eye at once is the Flavian's long, thick neck, which would have been relieved by a greater display of the toga about the shoulders; as it is, only slight traces of it may be seen on the very tips of the relief, although there is a suggestion that in this the Medusa may be intended, which Domitian is known to have worn on his breast as a charm and which is quite distinctly represented in many of his coins.

The first two titles or prænomena of the inscription, IMP(erator). CAES(ar), are not legible, but doubtless to be inferred, according to the usual formula of this period, first witnessed in our series in the coin of Titus and not to be renounced until after many generations of Emperors. The remainder is quite clear: DOMIT(ianvs). AVG(vstvs). GERM(anicvs). CO(n)S(vl). XI. CENS(or)s. POT(estate). P(ater). P(atriciae), "the Emperor Caesar Domitian Augustus Germanicus, Consul for the Eleventh Time, with Censor's Power, Father of His Country."

Germanicus had ceased to be a family name with the imperators since the death of Nero. We now find Domitian appropriating the title in the year 84 A. D., by virtue—of what?—a mock triumph, in which slaves

with wigs of flaxen hair and painted faces were hired to impersonate German captives. The hypocrisy and shame of a tyrant are here graven in a single word on a nation's coin. As a laudatory epithet, Germanicus is given a place in the group that is intermediate between the purely family names and the official titles. It therefore stands next to Augustus, which always takes precedence over all others of its class, until displaced by Trajan's Optimus (Pl. I, fig. 12).

The assumption of Censorial Power was peculiar to the Flavian dynasty; neither earlier nor later Emperors seem to have coveted it in any such degree. Domitian gave it an added majesty in attaching the adjective "Perpetuus," "perpetual" or "for life"—a unique and solitary instance, which was variously expressed upon the coins. The abbreviations CENS.POT for "Censoris Potestate," "with the Power of Censor" or for "Censoria Potestate," "with Censorial Power" either of which may be the reading of our coin, was framed after the analogy of the long-established "Tribunica Potestate." This latter title Domitian seems to have sacrificed in order to give place for his Censorial hobby, for it is omitted from both his coins in this collection. Yet it must be noted that, while he gave CENS. POT preference over TR.P, he could not give it the same rank as the latter would have held in the formula, for the Consular title takes precedence.

If we were without other data to aid us, the title Germanicus at least would determine the coin as struck after January of 84. But with the help of the formulae COS. XI. CENS. POT, the dating may be reduced to very small compass. Domitian became Consul XI, on January 1 of 85, and XII on the following January. But, as he did not assume the title of Censor Perpetuus until September 5 of 85, it leaves little less than four months in which the coin could be so dated.

The legend of the reverse is VIRTUS.AVGVSTI, "the Valor of Augustus." What a paradox!—so contemptible an Emperor parading himself as the Censor of Morals and claiming as his motto "The Valor of Augustus!" Virtus is represented by a military figure, doubtless Domitian himself, partially turned toward the right, with left knee inclined forward, the right arm sustained by a spear, while there rests in the hollow of the left what has been interpreted as the parazonium or short sheathed sword. The Emperor's cloak is hanging over the arm that holds this rather ornamental than serviceable weapon and its folds may be seen trailing low down in the hollow of the bent left knee. Undoubtedly, the boasted conquest of Germany is allegorized in this imposing martial posture of the would-be Caesar.

In the second of Domitian's coins, the as (Pl. I, fig. 6), the Emperor is portrayed on the obverse, right profile and laureated. The inscription more nearly encircles the entire rim than upon any of the series thus far reviewed. The curved line of Domitian's neck and shoulders marks the beginning and end of the inscription and occupies the space of but one letter. The formula reads: IMP(erator). CAES(ar). DOMIT(ianvs). AVG(vstvs). GERM(anicvs). CO(n)S(vl). XIII. CENS(or). PER(petvvs). P(ater). P(atriciae), "The Emperor Caesar Domitian Augustus

Germanicus, Consul for the Thirteenth Time, Censor for Life, Father of the Country."

The title is identical with that of the dupondius, just described, with the exception of the Consular year and the different formula employed for the office of Censor. The Numeral XIII defines the coin as having been issued two years subsequent to the date of the dupondius, *i. e.*, between 1 January, 87, and 1 January, 88.

The reverse has the legend FORTVNAE. AVGVSTI, "To the Fortune of Augustus." In the center is Fortune, a favorite figure upon Roman Imperial coins and reproduced several times under various guises in our collections. The goddess is gracefully inclined to the left, a cornucopia held upright in the hollow of her left arm. A defect in the coin renders it impossible to determine what is the object which Fortune is holding in her slightly extended right hand, though, by comparison with many other similar devices, it is very probably the patera or sacrificial saucer. . .

THE ANTONINES

TRAJAN, 98-117 A. D.

There are 8 coins of Trajan alone [in this collection] affording a fairly good opportunity to study the numismatic chronology of one reign. The dating of Trajan's money is assisted, over and above the numbering of his Consulships—he neglected the Tribuneships—by the series of additional titles and agnomina decreed him at intervals by the Senate. Coins on which these successive titles, severally or in groups, do not occur, naturally date from times previous to the assumption of those titles.

As a group, these 8 coins of Trajan are the handsomest in the collection. There is an unmistakable elegance in their workmanship, the pieces are symmetrical, the portraiture is strikingly clear, the lettering is evenly spaced and shapely, and, where the title becomes lengthy and the letters are necessarily smaller, the effect of the compact inscription running all around the rim is very pleasing.

The first three are dupondii, so nearly identical in both obverse and reverse, that they are presumably re-issues of the same coin from slightly altered dies. With but the exception of a different spacing between two letters on the obverse, where the point of the wreath upon the Emperor's head breaks the continuity of the inscription, and a change in the numeral of the reverse by the addition of a single stroke, the three so closely resemble, that it was deemed sufficient to select one (Pl. I, fig. 7) to illustrate the group.

The obverse in all three contains a spirited portrait of Trajan in high relief and with laurel-crown, thus identifying them as dupondii. The face on two is unmistakably the same with which we have become so familiar in the Vatican bust—the hair combed forward over the low brow; the strong, virile features. On the third, the one selected for the cut, the head seems somewhat larger and the face fuller and more rounded. On this last-named coin, the lettering of the inscription is compact and the apex of the crown does not intrude into the circle of the title.

The legend of the obverse reads: IMP(erator). CAES(ar). NERVA. TRAIAN(vs). AVG(vstvs). GERM(anicvs). P(ontifex). M(aximvs), "The Emperor Caesar Nerva Trajan Augustus, Chief Pontiff." With the formulae of Caligula and the Flavians still in mind, the title, that Trajan here affects is strikingly simple. The absence of both the Tribunicial and Consular honors and the Pater Patriae is at once apparent. With only the obverse before us, the suggestion might arise, that, out of all his possible titles, Trajan emphasized the religious, prizing the office of Pontifex Maximus above the civic or secular duties, like another Numa Pompilius—rather a surprising conclusion to reach in the face of what history has to say of Trajan's brilliant military achievements and of how the greater part of his reign was spent in the camp. The illusion is dispelled on turning to the reverse, where we find the missing titles. It is only a proof of the law of variety, for Trajan here relegates a portion of his formal crown-name to the reverse, though others of his coins to be described later restore these same titles to the position on the obverse which we have observed in the foregoing pieces.

Both Nerva and Trajan had been conjointly awarded the agnomen Germanicus between October and December of 97—a name which Trajan maintained to the last. The office of Pontifex Maximus could not be divided at this period in the history of the Empire; therefore the presence of P. M upon these coins indubitably dates them after Trajan's accession as sole Emperor in January of 98. Without the assistance of the more definite dating found in the reverse, the presumption from the obverse is in favor of an early date in Trajan's reign, for the inscription is too brief to belong to his later years, when the accumulation of honorary addenda taxed the mint-master to include them within the circumference of a coin. An especial proof of early coinage, as we shall presently discover, is the absence of the name OPTIMVS from both obverse and reverse.

The reverse of the particular coin selected for the obverse of this group is not a clear specimen. Another has therefore been chosen from the three to represent the reverse (Pl. II, fig. 7). The design recalls the Victory of Titus's coin (Pl. II, fig. 4), but with quite marked differences. On the coins heretofore described, Victory and Valor and Fortune have been designated by name. In this coin of Trajan, Victory is not named but readily to be inferred from her attributes. She is here depicted as moving to the left instead of to the right, as in Titus's coin; her wings are extended upward and above her head, not backward; her left hand simply grasps the drapery by her hip; her right hand is extended forward and somewhat downward, rather than upward, as in the Flavian coin, for the object she holds is a shield, whose cognizance is Rome's monogram, the initial letters S. P. Q. R., the first two over the others, representing "Senatus Populusque Romanus," "the Roman Senate and People."

The inscription of the reverse reads: TR(ibvnicia). POT(estate). CO(n)S(vl). II. P(ater). P(atriae), "With Tribunicial Power, Consul for the Second Time, Father of His Country." These titles are, as it were, carried over from the obverse in continuation of the list which began there.

Trajan seems to have shared the attitude of Domitian in preferring the Consular office to the Tribunicial. On 1 January, 98, Trajan entered upon his Second Consulship, with the elder Emperor Nerva as his colleague, so that, if we were to depend upon this one item alone, the coin could be interpreted as having been struck before the accession of Trajan as sole Princeps, although Nerva died little over three weeks afterwards. But the P. M on the obverse and the title P. P here contained on the reverse, prove the coin as belonging within the first two years of Trajan's sole Principate, for the title *Pater Patriae*, like that of Pontifex Maximus, as we have seen from the discussion of the obverse, was not given until he had become sole Princeps. In fact the P. P was not assumed until 99. Therefore, as the Third Consulship did not begin until 1 January, 100, the coin falls within the year 99 A. D.

As the last-described group of three were dupondii, it so chances that a second group of three now follows, composed of assarii, as attested by the presence of the corona radiata. The first of these three (Pl. I, fig. 8) falls within Trajan's Third Consulship, as the reverse discloses, *i. e.*, within the year 100 A. D. The inscription on the obverse reads exactly as in the coin of 99, for no additional titles had as yet been awarded. The only difference is that the Emperor here wears the corona radiata. There is the added feature, not always to be found in the *nummi radiati*, but present in all the three coins of this group—a bow of ribbon attached to the lowest point of the crown at the back of the head, just where the bow would be in the case of the laurel-wreath.

Trajan's profile is the same as in the previous coins, in fact scarcely any alterations are to be noted in the Emperor's features throughout all his eight coins. It was a face which Rome might well be proud to retain unchanged on her currency.

The reverse (Pl. II, fig. 8) introduces an agreeable change into the succession of standing figures. The seated woman, under her various appellations, becomes a very familiar device on the reverses of Roman Imperial coins. Though this reverse is quite obscured, the dim outlines are sufficient to show that this must be a seated Fortuna, facing to the right, for a cornucopia can be made out in an upright position in her left hand.

The inscription reads TR(ibunicia). POT(estate). CO(n) S(vl). III. P(ater). P(atriciae), as in the group last described, with the exception of the numeral, which, as already shown, designates the year as 100 A. D. . . .

In the fifth of Trajan's coins (Pl. I, fig. 9), also an *as* like the last-mentioned piece, though somewhat smaller and much more symmetrical, some rather interesting changes are encountered in the obverse. This is the first coin in the series in which the folds of the toga are distinctly shown in the Emperor's portrait. It is a graceful addition. . . .

A yet greater change is to be noted in the way the formula is expressed, found in this series only in this and the three coins of Trajan yet to be described. The legends of the obverse have hitherto contained the Emperor's name in the nominative, whereas these of Trajan now introduce the dative case in dedicatory style. The coins are thus designated rather more

literally as having been struck in honor of the Emperor by the Senate, and the Emperor himself as the recipient. Such a system seems to have been employed by Trajan's moneyers after the year 105 A. D. The lengthened inscription owes something to this new form for the dative case necessitates two additional letters.

Thus the inscription reads: IMP(eratori). CAES(ari). NERVAE. TRAIANO. AVG(vsto). GER(manico). DAC(ico). P(ontifici). M(aximo). TR(ibvnica). P(otestate). CO(n)S(vli). V. P(atri). P(atriae), "To the Emperor Caesar Nerva Trajan Augustus Germanicus Dacicus, Chief Pontiff, with Tribunicial Power, Consul for the Fifth Time, Father of the Country."

Late in 102 A. D., in honor of his splendid successes across the Danube, Trajan had been awarded the well-earned title of Dacicus, thereafter to be included as a part of his actual name, in the same way exactly as the younger Scipio, in the times of the Republic, was familiarly known as Africanus, and Pompeius as Magnus. Trajan's Fifth Consulship began 1 January 103, but his Sixth was not assumed until 1 January 112. Remembering that the dative formula did not come into use on Trajan's coins until after 105, there is still left a period of seven years within which this piece may be dated. No additional titles were decreed during this time, and Trajan persisted in his neglect of the Tribunicial year, so that no closer definition for the date may be secured.

The increase in the length of the inscription necessitates a resort to abridgement wherever possible. This accounts for GER instead of GERM, and TR. P instead of TR. POT, as heretofore expressed.

The figure on the reverse (Pl. II, fig. 9) reminds us of Domitian's second coin (Pl. II, fig. 6), for it is again the standing figure of Fortuna, though with different accompaniments. It is an echo of the reign of Trajan's predecessor, Nerva, who had employed an exactly similar design. We must be reminded that, amid all the fascinating variety in the types of Roman Imperial coins, a variation which contrasts oddly with the conservatism in coinage of our own era, there was yet a very marked substratum of fixedness exhibited now and then. The types employed by former Emperors were very frequently repeated by their successors, either out of admiration for the men themselves or for the particular device on their coins which may have appealed to the individual. The designs of the reverse were often appropriated in entirety, where they were but an allegorical figure without definition of date or occasion, or the same device would be used and merely the inscription altered. This "restoring" a coin, as it was termed, marked some reigns particularly, where it was certainly the deliberate choice. Thus it was that the very first coin in our series, the coin struck by Tiberius in honor of Divus Augustus, with its altar and the legend PROVIDENT. (Pl. II, fig. 1), was restored by Vitellius; and the VICTORIA. AVGVST. of Titus (Pl. II, fig. 4) was the repetition of a device similarly employed by his father, and was in like manner appropriated by Domitian. In the later stages of the Imperial coinage, as for example in the times of the Constantines and the Valentinians, the excessive recourse to "restoration" seems to have been due in great measure to the actual poverty in artistic design.

And so, the description given by Humphreys in his *Coin Collectors' Manual* (Vol. I, p. 331) of a coin of Nerva, exactly answers to this reverse of Trajan's—"a robed female standing, with her right hand on a rudder, and her left supporting a cornucopiæ, emblematic of the goddess Fortuna guiding the helm of the State." The inscription "Fortune of Augustus," which usually accompanies the above device, is only to be inferred in this coin of Trajan. The inscription which here takes its place is one of the greatest tributes the great Emperor could receive: S(enatvs). P(opvlvs). Q(ue). R(omanvs). OPTIMO. PRINCIPI, "The Roman Senate and People, to the Best Prince." This loving and sincere epithet came into use on the reverses of coins of this reign in 105 A. D., contemporary with the employment of the dative formula on the obverse. It was made a regular name by decree of the Senate in 114 A. D., and was thereafter a fixture among Trajan's names on the obverse. The presence of OPTIMVS. PRINCEPS upon the reverse must illustrate a purely voluntary compliment, preceding by almost a decade its introduction as a legalized cognomen. It was a name in which both Trajan and the people seemed to take genuine pleasure.

By reference to Stevenson and Eckhel, we find that the sixth of Trajan's coins (Pls. I and II, figs. 10) is one of the most famous of Roman coins. The inscription of the obverse is identical with that of the last coin and therefore belongs to the same general group, *i. e.*, to the period previous to the admission of the name Optimus among the agnomina of the obverse, though it is to be found on the reverse, after the fashion illustrated in the preceding coin.

The reverse displays the design of what has been popularly interpreted as Trajan's bridge across the Danube, one of his great strategic enterprises in the course of his second Dacian campaign, 105-106 A. D. The reliefs on his column in Rome include the bridge in their fascinating review of moving pictures. Our coin reveals two tall towers or piers with an arched structure between. The perspective is so adjusted that, while we are apparently facing the center of the arch, at a point midway between the two towers, we are yet looking down the line of the arch, for the tower on the right presents its landward or outward face, while it is the waterfront or inward face of the tower on the left, as is shown by the fact that the lines of the arch pass across it. The arch itself is divided into two parallel courses, and these courses into sections by vertical cross-pieces which protrude below the arch. Clearer specimens of our coin show distinctly the groups of statuary on the towers, the gondola-shaped boat with cargo under the arch, and the chain or cable stretched on the water level between the towers.

Some numismatists have suggested that this coin presents, not the bridge across the Danube, but the new harbor at Ancona. The statues surmounting the towers and the chain stretched between are maintained to be more appropriate to a harbor. Eckhel however stoutly contends for the bridge, for the reason that the structure is represented as arched and erect, and not a curve on the horizontal, as a harbor would be.

The inscription, evidently the most popular in usage on Trajan's coins, is again the S. P. Q. R. OPTIMO. PRINCIPI, "The Roman Senate and People, to the Best Prince."

The seventh of Trajan's coins (Pls. I and II, figs. 11) is the first sester-tius or large brass in the series. It is much worn in places but with enough left, of both the inscriptions and the portrait, to identify it without question. The relief on the obverse presents the Imperator with laurel wreath. The profile is much like that of the preceding coins, but the back of the head is rather elongated, such that Trajan has the appearance of wearing a lion's skin, as in representations of Hercules.

This much of the inscription is legible: RVAE. TRAIANO. AVG(vsto). GER(manico). DAC(ico). P(ontifici). M(aximo). Without further evidence at hand, we can only say that the coin falls between the dates 102 A. D., when Trajan received the designation of Dacicus, and 114, when Optimus was also added to his name. This latter would appear before AVG, as we shall see from the coin next to be discussed, so that there can be no question as to its absence from this obverse. As it does, however, appear on the reverse, the money doubtless belongs to the class already exemplified, wherein the official use of OPTIMVS was anticipated in popular usage.

The reverse is too much worn to reveal the design. There are hazy outlines of a standing figure in the center, with suggestions of an oval shield on the left arm, or it may be a cornucopia. The letters INCIP, evidently part of the word PRINCIPI, are quite clear, proving it to belong to the "Best Prince" type.

The eighth and last of our coins of Trajan (Pl. I, fig. 12), in which the corona radiata recalls us to the consideration of a dupondius, marks another step in the evolution of the coinage of this reign and the climax in Trajan's accumulation of titles. The inscription of the obverse reveals an increase by two new names: IMP.CAES.NER.TRAIANO.OPTIMO.AVG.GER. DAC.PARTHICO.P.M.TR.P.—and here the inscription becomes illegible. There remains but COS.VI.P.P. to fill out the complete formula in the style which we have learned to recognize in Trajan's coinage.

Trajan had formally accepted the appellation of Optimus in 114 A. D. and invested it with even greater importance than the name Augustus. The position he gives it in his formula clearly reveals his sentiment towards it. It is the first instance in which Augustus suffers displacement in matters of titular precedence. Further proof of Trajan's preference may be deduced from the fact that Optimus never appears on the coins in abbreviated form, though the final O of the dative case is sometimes dropped, which is not very violent abridgement.

Parthicus was the latest honorary name to be awarded the great soldier. Its place could only be determined by considerations of sequence. It was the culmination of a long succession of military achievements, expressed by an eloquent series, now reading Germanicus Dacicus Parthicus. Trajan's practise was to give the full form to each new name until the awarding of another tended to eclipse the former ones. Thus we find Parthicus given its unabridged form in the dative, while the earlier military titles are abbreviated. Neither Trajan nor the Senate were willing, as yet, when this coin was struck, to suffer the fullness of their satisfaction to be shortened even in name.

Attention may be called in passing to the abbreviation NER for Nerva, the only instance of the kind in our series.

The name Parthicus had been decreed between April and August of 116 A. D. As Trajan died in August of 117, the coin may date from the last year of his reign.

The reverse (Pl. II, fig. 12) represents Trajan as Emperor, standing in animated posture between two trophies. His left leg is planted to the front, his body inclined toward the trophy on his left, which he grasps with that hand. But his head is turned toward the other trophy on the right which he is also seizing with his right hand. The moment caught seems to be that between two victories in rapid succession—he has gained one and, still in action, he lays hold upon another. The late date of the coin makes it probable that two victories in his sweeping Parthian campaigns are here commemorated.

The inscription, usually represented by the initial letters, is here expressed in full, though the coin is broken on the right and the last half of the formula can only be conjectured, though of course with entire certainty. It reads: SENATVS.POPVLSQVE.ROMANVS.

FREDERIC STANLEY DUNN.

University of Oregon.

BOOK REVIEWS

ESSAYS IN PENTATEUCHAL CRITICISM¹

BETWEEN 30 and 40 years ago Prof. Julius Wellhausen promulgated a theory, based on literary analysis, that the Pentateuch is not genuine history, but a composite document patched together from several documents of different ages, in which the chronology is entirely disregarded and the arrangement is according to a supposed theory of development. According to this theory two documents originated with distinct Prophetic schools, designated by the symbols J and E because they used respectively Jehovah and Elohim as the names of the Deity. These documents were written during the early Monarchy, several hundred years after the time of Moses, and were subsequently combined into one narrative by an editor, or "Redactor," as he is called. Later Deuteronomy was written and published as a production of Moses in order to give it more weight. This they designate as D. Later still, indeed not till after the Exile, the Priestly legislation was devised and attributed to the time of Moses. This is designated P. and constitutes a large part of the Pentateuch. On this theory there was no Ark in the time of Moses, and there was no central place for sacrifices until the building of Solomon's temple. In short, the history of Israel was entirely reversed. What is represented as first is put last and the last first.

In order to accomplish this, however, innumerable revisions and emendations have to be supposed until the theory becomes more cumbersome and

¹ *Essays in Pentateuchal Criticism.* By Harold M. Wiener, M. A., LL.B.; pp. xiv, 239; \$1.50 net. Oberlin: Bibliotheca Sacra Co., 1909.

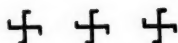
complicated than the Ptolemaic system of astronomy. Nevertheless the theory has become so popular that a large number of Old Testament scholars both in Great Britain and America have adopted it in full or in part, and popular literature is becoming so permeated with it that multitudes are coming to regard Moses and the Patriarchs as mythical or legendary heroes, with but slight basis of personality. So confident have the advocates of this theory become that they freely relegate all who question its truth to the class of "old fogies" and "ignoramuses" whose objections are unworthy of consideration.

But in the author of this very learned, able and convincing book the times of Moses are rejuvenated, the theory of the Wellhausen critics is brought to the test of facts that are beyond controversy and the correctness of the traditional theory established beyond all reasonable doubt. While Mr. Wiener addresses himself primarily to scholars, his masterly presentation of facts and arguments is so clearly and forcibly made that the ordinary reader can get its main points without difficulty. In the first place, he shows by such an array of textual evidence as has never before been attempted, that the use of the names "Jehovah" and "Elohim" in the Pentateuch was so interchanged in the original manuscripts that the present Massoretic text cannot be depended upon, so far as these names are concerned, and hence it follows that the Wellhausen critics have built their house on a foundation of sand. Next he shows that the critics have overlooked a great many scriptural passages in which the antiquity of the Priestly code, the existence of a central place of sacrifice and of the Deuteronomic regulations are clearly recognized. Again, he shows that in their phenomenal ignorance of legal terms and forms the critics have created a large number of discrepancies which do not in reality exist. For example they confound a "sanctuary" with an "altar," they do not know the difference between "seduction" and "rape," nor between a "bond slave" and one who, has pledged his services for a term of years to satisfy a debt.

There is a very illuminating chapter on the transmission of numbers in early Hebrew manuscripts. From this it appears that in transcription it was very easy to multiply the number by ten, because of the similarity of the formula for the tens and the hundreds. One who has not given special attention to this subject will be surprised as well as gratified to see how a few natural clerical errors in the record as it stands in the Massoretic text have doubtless created difficulties which disappear when the probable original text is restored. Repeatedly where the numbers in the present text are divided by ten they come down to proportions which appear reasonable in view of the other conditions implied. When this reduction in numbers, and the climatic conditions of the period shown to have existed at that time by Mr. Ellsworth Huntington in a recent article in the *Records of the Past* (Vol. VIII, pp. 140-144) are taken into account, the wandering of the Children of Israel with sustenance for 40 years in the Wilderness becomes easily credible.

Mr. Wiener, the author of this remarkable treatise is a Jewish barrister in Lincoln's Inn Fields, London. He is a recent graduate of high standing from Cambridge University and the author of the standard work on Biblical Law. He was led to devote his spare time to this discussion by a

challenge which Dean Wace of Canterbury made a few years ago to a leading Jewish Rabbi, asking why the Jews left the defence of their great hero, Moses to Christians? "Why do not you Jews" he asked "come to his rescue?" Mr. Wiener has come to the rescue with a defence that no one can afford to overlook. It is not safe to believe anything the Wellhausen critics say until one has read Mr. Wiener's arraignment of their statements of facts and their futile efforts at reasoning.



THE UNIVERSITIES OF ANCIENT GREECE²

FEELING that Greek educational institutions of the imperial times have not received their due share of consideration, Doctor John W. H. Walden has been moved to prepare a volume on *The Universities of Ancient Greece*. The first chapters are devoted to a consideration of the earlier methods of education, starting with the V Century B. C. when the idea was rather to train, especially in military science, than to educate. During this period education "consisted of two parts—a training for the mind and character . . . and a training for the body . . . *Music* in the broad sense (as being any art presided over by a Muse) comprised reading and writing, counting, singing, and lyre or flute playing." Lyric poetry and later tragedians came into school use.

From this early time the author traces the development of Greek Sophistry, which, although he admits that it was "responsible for much that was pernicious in style and in form of thought," was far from being "the wholly bad thing that it is, probably, with us."

The development of the relation of the state to education is traced. In the V and IV Centuries B. C. the state was indifferent to education, its position being that of "non-interference." Later, however, education was at public expense and the teachers came to be not only a highly respected and favored class but were exempt from taxes and the duties of public life, for in the first centuries after Christ it was considered that all teachers were serving the State and "a double service could not be required of them."

The main part of the book is devoted to the first 5 centuries of the Christian era, and gives the history of the educational institutions which crystallized during the first century, showing their advancement up to the time of Marcus Aurelius and then their decline which was hastened by the establishment of Constantinople as the center of Byzantine culture. This latter affected the smaller Greek schools and universities first and finally even the University at Athens.

Of special interest to most of our readers will be the chapters on the professors, their appointment and pay, what they taught, how they taught it and the school houses they used. Epicurus set the example of appointing his own successor, and thus established a method which continued to a greater or less extent for several centuries. Later, however, it became the

² *The Universities of Ancient Greece*. By John W. H. Walden, Ph.D. Pp. xiv, 367. Price \$1.50 net; postage paid \$1.65. Charles Scribner's Sons, New York.

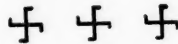
privilege of the students to change the appointment if the choice of their teacher proved to be unfortunate. Students did not choose studies so much as teachers for the personality of the instructor was the potent factor which determined their choice not only of subjects but also of the universities to attend.

Another interesting feature of the book is the description of the student life from boyhood to the college graduate. This is accomplished by giving the substance of the autobiography of Libanius, a sophist of the IV Century A.D.

In conclusion he says:

"The custom of the present day is rather to decry the ancient sophistical training. Its weaknesses are so apparent, and its insufficiency, as judged by modern standards, is felt to be so great, that it is easy to denounce the whole system as artificial and barren. And yet, perhaps, the better way is to see what there really was in this education and what it professed to be in the world as it was at that time. Artificial and barren, in a certain sense, the education was. By laying too great stress on the form in which a thing was said, we may admit, it led to all manner of excesses and extravagances in the matter of style; and this, too, we cannot deny: it did not contain within itself the possibilities of great speculative or scientific truths. If we look, however, to the grand displays of the sophists themselves, we can say—as has been said by others—that we no longer have the means of judging of these aright. Many things in them are lost to us today, and of others we have but an imperfect understanding and appreciation. The play of accent and rhythm, the delicate adjustment of sound and sense in the selection and arrangement of words, the harmony of form, we try to understand, but do so only imperfectly. The orator, his personality, the rise and fall of his voice, the variety and appropriateness of his gestures—these we can only imagine. Even the bare words which were spoken are in most cases unknown to us.

"Greek sophistry did not profess to teach men scientific knowledge or abstract theories—the performance of that task was left to the specialists and to the various schools of philosophy, as long as these existed—but it did profess to prepare men for the active duties of citizenship—the citizenship of those days—and to provide them with a broad and liberal culture, and this task it performed on the whole satisfactorily and effectively for several hundred years" (p. 345-346).

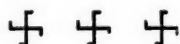


MIRACLE AND SCIENCE³

WE ARE too apt to forget that jurisprudence is a science. The proof of facts must conform to certain reasonable requirements and when those requirements are met the assent to the facts and the action following it are moral imperatives. The work of Judge Lamb is to be compared with that published many years

³ *Miracle and Science*. By Francis J. Lamb, Attorney and Councillor at Law; 12mo. 350 pp. \$1.50 net. Oberlin: Bibliotheca Sacra Co. 1909.

ago in defense of the Gospels by Judge Greenleaf, the great authority on evidence. One of his most impressive chapters treats of "perpetuating evidence,"—a phrase which contains an argument in itself. Unless we have some way of perpetuating evidence, one generation can learn nothing from its predecessors. But fortunately we can perpetuate evidence and the science of jurisprudence tells us how it is done, and gives us the rules regulating the transmission of documents from one generation to another. If we cannot depend on these rules, and do not recognize their binding character, all human affairs are thrown into confusion. By a clear and powerful array of facts and arguments, the learned author shows that the biblical books are worthy of the confidence and authority that is accorded to "depositions" properly taken from witnesses who are absent from court. The volume will be found of great value in aid of all historical investigations as well as in the particular subject of which it treats.



OUTLINES OF GENERAL HISTORY¹

IT IS a formidable task to present even the bare outlines of general history from the dawn of history to the end of the Russo-Japanese war within the compass of a book of 500 pages. V. A. Renouf in undertaking this task has met with such success that a second edition of his book has just been published. In his preface he states that "The dominant force in the modern world is that complex historical compound called 'Western Civilization.' The history of that Western Civilization must therefore occupy the greatest part of any modern General History"

"An Elementary History like the present, then, always represents a small selection from an immense range of facts. The reader has a right to ask by what principles the author was guided in making his selection. I tried to do the following: First, to show the continuity of history, or, in other words, to make the reader see that the present has grown out of the past. Secondly, to emphasize those events and institutions a knowledge of which is most useful to persons interested in public reforms in the East. Thirdly, to show the value of high ideals of truth and the advantage of liberal institutions. Under this third heading I confess to a personal bias. I believe, however, that the book is free from religious or racial prejudice."

The value of the book is enhanced by a bibliography, added by the editor, at the end of each chapter, giving references to elementary and popular works as well as to standard authorities. The "Comparative Chronological Table" in the second appendix gives a vivid summary of the course of human history.

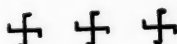
¹ *Outlines of General History*. By V. A. Renouf, B.A., of Pei Yang University, Tientsin, China; Edited by William Starr Myers, Ph.D., Princeton University, pp. xx. 501; maps and illustrations. \$1.30 net. New York: Macmillan Company. 1909.

HOME LETTERS OF GENERAL SHERMAN⁵

MR. HOWE has been very happy in his selection from General Sherman's personal letters for this volume of *Home Letters of General Sherman*. No one can feel that he has allowed the reader to trespass upon the sacred ground of Sherman's personal relations with his wife, and yet enough of the personal element is presented to show the deeply affectionate character of the man. The larger part of the letters are those to his wife, beginning back before their marriage, when Sherman, a boy of 17, was a cadet at West Point.

Aside from the biographical interest of the book, the historic value is great. Sherman wrote freely to his family of the events in which he took so active a part and expressed frankly his opinions of men and of affairs military and political. His motives, often questioned by his fellow officers, he explained fully in these letters which might almost be said to have furnished the safety valve for this great general. His keen insight at times made his comments almost prophesies.

More than half the book deals with Sherman's campaigns during the Civil War, especially at Vicksburg, in Georgia, and in the Carolinas, of which latter his son says: "My father always rated this campaign as his greatest military achievement and believed that it settled the fate of the Confederacy."

THE PANORAMA OF CREATION⁶

David L. Holbrook in a small book on *The Panorama of Creation* presents an interesting statement of his view of the relation between the first chapter of Genesis and geology. He considers this chapter the description of the creation as it would have been seen by an observer who states, not the actual origin of things, but what he saw. The book is interestingly and ingeniously written and will be helpful to those who do not understand the relation of the biblical account to the discoveries of science and those who have to answer the questions of others who doubt the value of the Genesis account.

⁵ *Home Letters of General Sherman*. Edited by M. A. DeWolfe Howe; 8vo, pp. 412; frontispiece. \$2 net. New York: Charles Scribner's Sons, 1909.

⁶ *The Panorama of Creation*. By David L. Holbrook, pp. viii, 87. Map. \$.50 net. Philadelphia: The Sunday School Times Co.

EDITORIAL NOTES

RESTORATION OF PYLON AT KARNAK.—M. Legrain has virtually restored the Great Pylon of Rameses I and Rameses II at Karnak and is now beginning the restoration of the southern part of the Hypostyle Hall.

PROTECTION OF EGYPTIAN TEMPLES.—Fourteen temples between Philæ and Wady Halfa have been protected so that they cannot be harmed by any possible inundation caused by the raising of the dam at Assouan. Philæ and Elephantine are to be further protected.

EXCAVATION OF THE DOLMEN OF BARBEHÈRE.—The Abbé Labrie has excavated the dolmen of Barbehère at Potensac (Medoc) and has forwarded the human remains to the Laboratory of Anthropology at Paris, where they have been examined by M. L. Manouvrier. Nineteen skeletons are represented, 16 adult men, 2 women and 1 infant.

ANCIENT ROMAN CONCRETE.—The Pont du Gard in Southern France, erected in 56 B. C., is a fine example of Roman concrete bridges. The concrete was not composed of crushed stone, but of alternate layers of large and small stones, gravel, etc., and of cementitious materials. Early writers described the method of preparation, "using boards laid on edge and filling the space between with cement and all sorts of small and large stones mingled together."

EXCAVATIONS NEAR THE ARCH OF CONSTANTINE.—It is reported that Commendatore Boni has restored to its original level one of the footpaths beneath the Arch of Constantine by removing the two feet of earth which had accumulated. The whole base thus becomes visible and the polygonal pavement of the road between it and the *Meta Sudans* has been laid bare. He expects to treat the rest of the arch similarly. The subterranean exits of the *Meta Sudans* have been discovered in the course of these excavations.

CAST OF LOWER JAW OF HOMO HEIDELBERGENSIS.—M. Capitan, acting for M. Laloy, has presented to the Paris Anthropological Society a cast of the fossil lower jaw found by Herr Otto Schötensack at Mauer, 6 miles south of Heidelberg and named *Homo heidelbergensis*. "M. Manouvrier held that the discovery represented a more advanced stage of morphological evolution than that of *Pithecanthropus erectus*, and M. de Mortillet that it was more primitive than the mandible of Spy." Dr. Siffre has called attention to its essentially human character.

PRESERVATION OF A SECTION OF ROMAN WALL IN LONDON.—The Society of Antiquaries, London, has succeeded in securing the preservation of a fragment of the Roman wall which formerly surrounded the city. It is situated near Newgate street, close to a new

addition to the general post office. The fragment is that of a curved bastion 50 ft. long, 20 ft. high and 8 ft. wide. It is well-preserved, bound together with the famous Roman mortar. The material is known as "Kentish rag," supported by heavy Roman bricks showing the characteristic layers of red tiles such as may be seen at Burgh Castle. As the top is below the street level, the Society proposes to build around the relic so that it will lie in a cave to be entered by stairs.

RESTORATION OF CLIFF PALACE.—During the summer of 1909, Dr. J. Walter Fewkes continued his work of reconstructing the cliff-ruins in the Mesa Verde National Park. The work was carried on under difficulties, as water was scarce, and had to be brought from some distance. Aside from the ordinary wear and tear of weather, the ruins have suffered from the vandalism of curiosity hunters. One of the finest samples of architecture in the Cliff Palace was on the verge of utter ruin when the work of restoration was begun.

The Cliff Palace is about 300 ft. long. It contains examples of every sort of cave-dweller's architecture—round towers, square towers, underground kivas of two different types and secular rooms of all the types that have been found in any other cliff-ruin. Dr. Fewkes' idea is to restore the ruins to the point at which they had been left by the builders, using only such material as had been in the hands of the original architects.

RECENT DISCOVERIES AT POMPEII.—Recently another extensive villa was uncovered at Pompeii. The middle room is ornamented with frescoes in a fine state of preservation. The drawing and expression show good workmanship. There are as many as 48 figures. One fresco represents a woman dressing her hair. She is attended by a maid and a Cupid. Another panel represents a naked priestess of Bacchus with a violet-colored veil. The figure is depicted with grace and vigor. There is also a clothed priestess of Bacchus. The villa also contains statues and other works of sculpture both Greek and Roman, as well as rich furniture and many vases. There were also found coffers filled with gold and silver money. In the basement were large amphoræ used for storage purposes. In the triclinium tables were prepared for 30 persons. Much silverware was found. Some silver pieces seem to have been taken out previously, for there are traces of clandestine search at some former time.

"MEDICINE WHEEL."—It is reported that in the Big Horn mountains, Wyoming, an altar regarded as sacred by the Indians, has been discovered by two mining prospectors. It is known as the "Medicine Wheel," and is held in utmost awe and veneration by the Indians of the surrounding country. It is a giant stone wheel on the flat top of Medicine Mountain, laid out symmetrically and built of great granite boulders so placed as to form a perfect wheel with spokes 150 ft. long. At the center is a great rocky hub. For years the whites have known that somewhere on Medicine Mountain there was some kind of a sacred monument, but the Indians would not talk about it. The identity of the builders is unknown, even

to the Indians. The Indian tradition is that the gods built it and that it is to remain as a sacred object to the end of the world. To the slopes of Medicine Mountain the Indians went for the charm which was to protect them through life. The mountain is considered by them as the home of the Great Spirit.

PIT DWELLINGS IN HOLDERNESS.—At the November, 1909, meeting of the Anthropological Institute a paper was read on Pit Dwellings at Holderness. Mr. William Morfit of Atwuck, near Hornsea, in Holderness, has for 20 years been studying these dwellings, which are excavated 5 ft. deep in the boulder clay and are covered by an unbroken surface soil to the depth of 18 in. The removal of the black clay which fills the pits discloses the original floor with its hearth and broken pottery, and the remains of feasts in the shape of broken bones and rude flint implements. Thirty of these dwellings have been examined and the pottery restored. Their great antiquity is proved by the fact that a surface soil 18 in. deep formed over them after they had been filled up. Upon this surface late Neolithic implements have been found. Therefore the dwellers must have been earlier than the Bronze Age. The pottery is rude, and without decoration. The bones found include the red deer, horse, Celtic ox, goat and pig. Although the sea is now near by, no fish bones or shells have been found, suggesting that the site, when occupied by the pit dwellers, was far inland.

GERMAN EXCAVATIONS AT TELL HALAF.—Under the supervision of Baron von Oppenheim excavations have been in progress at Tell Halaf in northern Mesopotamia. A building with a cuneiform inscription stating it to be the "Palace of Kapar, son of Hanpan," with a doorway protected by the usual monstrous figures in relief was found. One of these figures appears to be a winged human-headed quadruped with horns; another was probably a griffin. There was also a bearded man in a tight-fitting fringed garment with waist-belt. He has two "large curved horns rising from above the ears, and a high spherical cap with a flat top and a veil falling from the rim while his arms are raised and brandish a mace and a rude club." Another veiled head was discovered, probably a female, possibly representing Istar. Baron von Oppenheim would attribute the male head to the Hittite storm-god, Teshup. The architecture and sculpture are similar in style to those at Boghaz-Keuy, Sinjirli and Saktje-Geuzi. The date is considered to be about 900 B. C., and Kapar is thought to have been an independent sovereign. There are some reasons for supposing that the city in which the buildings stood was the Bet-Halupi on the Chebar taken by Asshur-nazir-pal in his campaign of 884 B. C.

ROMAN VASE CONTAINING COINS AND RING.—By reason of a recent slight change in the course of the Humber, an accumulation of silt at a point on the North Lincolnshire coast was washed away, revealing a well-made vase of Roman gray-ware. The vase rested upon the old bank. In the mud which filled it were 6 silver coins and a silver ring. The

coins are remarkably well-preserved. They have been examined and found to be referable to Valens (A. D. 328-378), Valentianus (A.D. 321-375), Julianus II (A.D. 331-363), Constantius II (A. D. 317-361) and Gratianus (A.D. 359-383).

The ring is as good as new. It is solid silver and has a solid square bezel upon which is a crude representation of the dove and olive branch, indicating Christian influence. One of 3 similar rings found in 1843 in Wiltshire in a vase with coins has a bird inscribed on it which so much resembles this as to suggest that they were the work of the same man.

The recent find is of value because of the dates given, which will aid in determining the chronology of other objects of a similar character. Probably the vase and its contents were part of a hoard hidden in the V century. The specimens have been placed in the Hull Museum.

HARRISON TRAIL STATE PARK.—Part of Spiegel Grove, near Fremont, Ohio, the estate left by President Rutherford B. Hayes, was, in 1909, presented to the State of Ohio, "for the use and benefit of the Ohio Archaeological and Historical Society," as stated in the deed from Colonel Webb C. Hayes, "so long as the premises shall be maintained as a state park, in which the old French and Indian trail along the Sandusky-Scioto water course from Lake Erie to the Ohio River, later known as the Harrison Military Trail of the War of 1812, shall be preserved in its present location and maintained as a drive, in which the trees, shrubs, and flowers now growing in said park shall be preserved and cared for, and together with such other trees, shrubs and flowers as may hereafter be planted in said park, shall be properly marked with the scientific and common names, so as to be instructive and interesting to visitors."

The tract of land, not far from Fremont, Ohio, thus deeded to the state includes about 10 acres, through which half a mile of the Trail winds. Five years after the death of President Hayes, the entire property, with its valuable library and collections, was tendered to the Ohio Archaeological Society on condition that the Society raise an endowment sufficient to preserve and care for it properly. The Society was unable to raise the funds, so the matter was dropped. This original purpose seems to be partially revived by Colonel Hayes when he said "that in the event of your Society securing the erection of a suitable fireproof building on said Spiegel Grove property, I will transfer to your Society or the state a suitable site therefor in said Spiegel Grove, together with all papers, books and manuscripts left by my father for permanent preservation in such building." His own collection would be included. He also expressed the desire that the whole of the property, including the house, should eventually be under the care of the Society.

POSSIBLY A PEDESTAL OF A STATUE OF BACHUS.—During 1908 an interesting find of 7 sculptured blocks of stone was made on a farm on the Via Prænestina, just outside of Rome. A member of our Society, Prof. Edward W. Clark, who is now in Rome lecturing on the Antiquities of Rome under the auspices of the Bureau of University Travel,

looked up the matter at our request. After visiting the site on the Via Prænestina, he writes on 28 October, 1909, "The stones had just been taken 3 days before [his visit] to the Museo Nazionale, Rome. I saw the site of the excavation, which was very slight and owing to trouble with the authorities had been filled in again. Next day I went to the museum and found the director. He kindly gave me permission to see them, they are in the store room yet, for they are not yet the property of the museum, but on that account could not give me permission to take a photograph. I saw them, however. They are 7 in number. One piece is lacking as it requires 8 to complete the circle. They are a little over 6 ft. high and perhaps $2\frac{1}{2}$ wide, each curved so that when the 8 are together they will form a circle. The figures are about 5 ft. high, and are about the size of girls say of 18 years, of that height. They are all dancing, standing on tiptoe, and the attitude of the bodies, the position of the limbs, upper and lower, the arrangement of the hair in simple knots, and above all the beautiful flowing draperies make a set of figures very beautiful indeed."

"What the sculptures were for is not yet certain. Possibly they formed a pedestal upon which stood a statue of Bacchus. Some think that there may have been a temple to this god at this point. The farm is not far from the ruins of the villa of Gordianus. Close by is the tower known as the Torre de Schiavi."

PERSIAN PALACE OF UKHEITHAR.—On November 9, 1909, Miss Gertrude S. Bell read a paper before the Hellenic Society (London) on "The Persian Palace of Ukheithar," which she discovered in the Syrian desert. Miss Bell explained that the Sassanian empire was protected on the northwest by a small semi-independent Arab kingdom ruled by princes of the Beni Lakhmid. Little has been known of their palaces beyond mention of them by Arab chroniclers. This fortified palace of Ukheithar is chief among them. Its plan shows such similarities to Sassanian palaces that it was evidently erected by Persian architects. The larger brick vaults are constructed *par tranches* in the manner of the vaults at Ctesiphon; the smaller ones, of stone and concrete, are related to those of Firuzabad and Sarvistan. Arched niches break the monotony of flat wall surfaces; there are some remains of stucco ornament. "Characteristic features in arch, vault and decoration, as well as the square bastioned plan, connect the architecture of Ukheithar not only with Persian and Parthian art, but also through these with the earlier arts of Mesopotamia." There is here but one dome and its complete absence in Parthian buildings points to the conclusion that it is a late feature in Mesopotamian architecture. "The dome of Ukheithar is set on corbels, but the 'squinch' arch is found over the angles at the corners of the vaults. The ground vault is frequent, and, as it is unknown in buildings of the Sassanian period, it seems probable that the palace should be dated early in the Mohammedan period, when some Hellenistic influence from Syria might be expected. This does not prevent it from being one of the finest known examples of Persian architecture; it is evident that the Umayyad Khalifs must have employed Persian builders to erect their hunting palaces on the east side of the Syrian desert, just as they used Syrian builders in the western marches."

A BARROW NEAR DRIFFIELD.—On July 19, 20 and 21, 1909, Mr. J. R. Mortimer opened a barrow 6 miles north of Driffield, Yorkshire. A rectangular area 15 by 11 ft. was first uncovered and surrounded by a trench 6 ft. deep which disclosed the original undisturbed surface level. Quantities of broken bones, principally human, were found in the course of digging the trench. Mr. Mortimer considers them relics of the funeral feast, thrown in during the construction of the barrow. "Occasionally these bones seem to have been baked, suggesting cannibalism."

In the central area at a depth of one foot a skeleton was found. This seems to have been a "secondary burial." and was probably originally covered much deeper. The bones were fairly well preserved, evidently of a powerfully built man about 60 years of age. "He had been buried on his left side, with the head to the north, and the knees drawn up at right angles to the body. His arms were crossed in front of the chest."

Less than a foot below this was another skeleton also of a male. This man was buried on his right side with his head to the south. Two feet lower yet were the bones of a human leg—possibly also a relic of the funeral feast.

A little to the northwest of these was encountered what was probably the primary interment. The grave was 7 ft. 8 in. by 4 ft. 7 in. at the top, and 6 ft. 8 in. by 3 ft. 6 in. at the bottom and 4 ft. 3 in. deep. The body was thus 10 ft. from the top of the mound. The grave had been excavated in the chalk, and here the principal interment occurred and was much better preserved than the other two. "The skeleton was on its left side, with the legs drawn up as usual, the head pointing to the south-southeast. In this case, also, the bones were remarkably large and massive and the skull was of the long-headed type." There was not a trace of bone, pottery, or other foreign matter in the grave. "From experience gained in opening other barrows, however, it was clear that the primary burial was that of a Bronze Age British chief, and that within the mound, as secondary burials, were two skeletons of men of similarly powerful stature. Whether these were slain and buried as offerings to the gods or whether they were ordinary burials in a previously existing barrow, will never be known."

"THE MOST ANCIENT OF HUMAN SKELETONS"—In September, 1909, Dr. Capitan and M. Peyrony exhumed a nearly complete human skeleton of the Mousterian age at Ferrassie, in the department of Dordogne, France. The strata covering it were intact. The work of excavation was done with extreme care so that it was possible to photograph the remains before they were disturbed.

"The Ferrassie skeleton was discovered in the course of exploring a mass of débris about 100 ft. long, sloping upward from the road to a low chalk cliff rising a few yards above it. The width of the mass varied from 30 to 60 ft. and its height, at the cliff, from 15 to 30 ft. The appearance of the superficial layer and the fissures of the cliff indicated the fall of an overhanging cliff, which should have formed an extensive shelter at a much earlier epoch. As this view was confirmed by the discovery of chipped flints

where the edge of the mass was cut by the road, explorations were undertaken several years ago, but nothing of especial importance was unearthed until recently. The excavation was begun by digging a broad trench from the road to the cliff in order to allow the mass to be removed in successive horizontal layers. Last September two bones were seen slightly projecting from the wall of the trench, near the bottom. On removing a little earth the bones were recognized as a human tibia and femur. The earth over the bones was then removed, by horizontal layers, with extreme caution. When the greater part of the mousterian stratum had been removed, three flat stones, about 8 in. square, covering the skull and parts of the arms, were discovered. The reddish brown sand which surrounded the skeleton contained many large splinters of bones of animals which showed marks of hammering. Very slowly and with infinite precaution the skeleton was laid bare without displacing a single bone. It lay on the back, with the trunk turned slightly to the left, and the legs sharply bent back under the thighs, which were half flexed on the pelvis. The knees were turned to the right. The left arm was extended beside the body, with the hand at the hip, while the right arm was bent, and the hand near the shoulder. The head was turned to the left, with the mouth wide open.

"The bones, though broken in places by the great weight of the earth above them, remained firm and in their normal positions. Only the bones of the right hand and foot had been displaced, and in part removed, probably by rodents or small carnivora.

"The skeleton was photographed as it lay and the leg and arm bones were carefully removed. The pelvis was then covered with tinfoil and a large plaster cast was formed around it, so that it could be taken up without injury. The thorax and the skull were treated in the same way. Hence these parts can be mounted without the loss of a single fragment, as the earth in which they lay will surround them, inside the plaster casts, until the casts are opened in the preparing room. This method is commonly employed by palæontologists, but this is its first application to human remains.

"Dr. Capitan believes that the skeleton is that of a corpse regularly prepared for sepulture, which may have been covered with earth, but was not buried in a grave. Protected by the vicinity of the living inhabitants of the shelter, the skeleton escaped the hyenas and was only nibbled by small animals. This unique skeleton, which is at least 20,000 years old, will probably be mounted and exhibited in the Museum of Natural History at Paris." [*Scientific American*]

